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DISEASES OF THE SKIN

IN

TWENTY-FOUR LETTERS

ON THE

PRINCIPLES AND PRACTICE

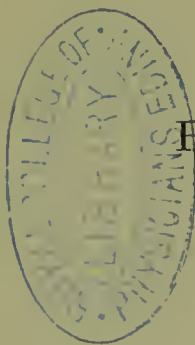
OF

CUTANEOUS MEDICINE

BY

HENRY EVANS CAUTY

SURGEON TO THE LIVERPOOL DISPENSARY
FOR DISEASES OF THE SKIN



LONDON

J. & A. CHURCHILL, NEW BURLINGTON STREET

LIVERPOOL

ADAM HOLDEN, 48, CHURCH STREET

MDCCLXXIV

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TO
EDWARD BALMAN, ESQUIRE,
DINGLE HILL, LIVERPOOL.

MY DEAR SIR,

The first provincial institution for the study and relief of Cutaneous diseases owes its foundation to your brother, the late Dr. BALMAN, and yourself.

A considerable proportion of the experience embodied in the following pages has been acquired at this institution; they have accidentally taken an epistolary form, and I venture to inscribe them to you as a mark of respect to your brother's memory, and as a slight acknowledgment of your own charitable exertions, and of the courtesy I have always received from you.

I am, yours very faithfully,

HENRY EVANS CAUTY.

44, CATHARINE STREET,
Liverpool, Nov., 1873.

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LETTER I.

Introductory—Anatomy—Details—Illustrated Literature—General Literature—Copeland on Psoriasis—Truth of Remarks—. “Parasitic Diseases of the Skin”—Absence of Principle—English and Foreign Dermatologists—Poverty of Foreign Treatment—English Discoveries—Comparisons unavoidable—Hebra—Ordinary works on the Skin—Nomenclature—Orthography—Hunt: Present series—Specifics decried—Statistics: Classification, Medicines, Nomenclature, Glossary—Popular delusion—Light Literature of Dermatology: Post Mortems—Remedies—Complex Prescriptions—Donovan’s Solution—Globulistic Treatment—Ordinary Diseases.

SIR,

Before commencing the study of diseases of the skin, it is necessary to become acquainted with its Anatomy, Physiology and Pathology, subjects that you will find amply described in any of the standard works under these respective titles; it will not be necessary to often allude to them hereafter, except to remind you that a perfect knowledge of the conditions of a healthy skin is necessary, to enable you to appreciate rightly those deviations from the usual state which constitute disease, and to distinguish morbid conditions from simple individual variations.

It will not be imperative to burden your memory

with very many details, such as the size and number of pores or hairs on a square inch ; but the facts of there being a fibrous or basement layer, a papillary and an epidermic layer, and that there are blood vessels, nerves and glands, must always be kept in mind ; the blood itself will receive greater attention by-and-by.

You will also notice that the skin varies much in thickness, that it has elastic fibres, and that in some parts it has free play over the subcutaneous tissues, whilst in others it is closely connected with the muscles.

Having refreshed your memory, if needful, on all these points, you may turn to the Literature of Dermatology, which may be divided into two classes, Pictorial Representations, and those works in which illustrations are absent or only secondary.

You will find of what little use plates are in studying diseases of the skin ; for the best executed and most carefully coloured fail to give the idea of humidity which is so essential a feature in many cases ; and plates are all chosen to show distinct and well-marked cases of disease, which nobody could by any possibility mistake ; whereas what you will want in future to learn is to distinguish those forms in which the appearances are irregular and confused, and all illustrations are then valueless. If you turn to the article Psoriasis, in Copeland's *Medical Dictionary*, you will find the following paragraphs. " The differences between the species

of scaly eruption have often been exaggerated, or the extreme points of difference have been chiefly adduced and placed in bold relief, by most of the writers on diseases of the skin, believing that the enumeration of minute distinctions, and the recognition of modifications of external characters, would evince a more intimate knowledge of their nature than a display of their relations, not only with one another, but also with a state of the digestive, the assimilating, and the excretive functions, and of the circulating fluids. The devotion to ‘specialities,’ with the view of attracting the public by the presumed advantages of, and by the superior knowledge assumed from, a division of labour, was first manifested in modern times by the writers on skin affections; and, like all others devoted to a single craft, who adopt merely a minute segment of the great circle of medical science for their practices on the public, rather than for its proper cultivation and improvement, they merely partially advance the trivial and the mechanical, to the detriment of profound or comprehensive views, and they fail in the recognition of extensive morbid relations.

“Whilst a few local distinctions or mechanical contrivances are paraded as proofs of a superior acquaintance with the adopted subject, their narrowed powers of mental vision fail to recognise much more important relations and matters, the sources from which the local mischief proceeds, and the varied sympathies which either produce, or are

produced by the object of exclusive adoption and cultivation—a cultivation resembling merely the superficial scraping of the soil by the hands of savage ignorance, not the deep ditching, the draining and the manuring of applied science. The human microcosm cannot be advantageously studied in one of its parts only, nor can its states, affections, or structural lesions be either understood or remedied by confining our enquiries and our means to a particular or limited locality, even although that locality is the seat of disease. The animal body is one and indivisible, no one part being independent of another—no single system, or organ, or tissue being disordered or diseased without implicating more or less the functions, and even the organisation of several or even of all the rest.

“Hence it is that no division of labour which has been adopted in medical practice in ancient times, since the ages of the *Pharaohs*, down either to the modern days of the higher and more regular grades of empiricism, or to the lower degrees of quackery and imposture, has tended to advance medical science, or to raise the respectability of our profession.

“On the contrary, all such divisions,—all adoptions of a single member, organ or viscus, for special practice or study,—have, in proportion to the degree of division, lowered our science to a craft, and sunk the physician to an empirical practitioner; they may have enriched the charlatan, but they have degraded the profession.”

Now without stopping to ask to what extent general medicine is free from the strictures cast upon dermatology, without enquiry if Copeland himself always gives, with the cause of disease and its treatment, why such treatment is effective, it may be accepted generally that there is great truth in the above remarks, and it would be no answer to them to prove that general medicine is at times equally at fault. But after this vigorous protest against dermatological classification and minutiae, Copeland gives up the struggle, and avails himself of divisions he despises, but which he does not attempt to elucidate or destroy. In another work, *Parasitic Diseases of the Skin*, there are three passages worthy of notice. One states that diseases of the skin are to be treated on principles different from those of general medicine; a second, that France and Germany are in advance of England in this branch of medicine; the third, that fleas do not exist in Australia. The first of these is somewhat justified by the absence of all principle in the work, as in most works on the skin; the second shows great ignorance of dermatology, if this is to be tested by results; and the third displays an extraordinary idea of natural history, pitiful in a scientific work, ludicrous in any other. The three great additions to the means of cure of skin diseases have been—Glycerine, introduced by Startin; Calomel Baths, by Henry Lee; and the articles on Arsenic and Mercury, by Hunt—all English. That

other nations have written on Dermatology, that they have examined, noted, and collected numerous cases and interminable minutiae is very true; but the result of all such work has been simply *nil*. As regards curing the diseases, comparisons are not desirable; but when an author commences with a voluntary and unnecessary abasement of himself and others, it is just as well that you should know that, whilst perfectly justifiable in his own case, he has no right or title to extend his humility. There are many foreign authors that may be perused with advantage, notably Hebra, to whom frequent reference will be made in the following letters. You will find that in Hebra's work there are grand descriptions, and yet that, with the greatest opportunities that have probably ever been afforded for the study of affections of the skin, there is not the slightest exercise of deduction of any principle on which their treatment is to be conducted, or of the causes by which they are occasioned; and as far as these two points are considered, the whole work might as well have been written by a machine.

The ordinary forms of works on the skin commence with a large slice of anatomy, with probably pictures of the hair, nails, etc. There is then a great deal on classification, a review of all previous efforts in that direction, concluding with some entirely new theory, much superior to any. Nomenclature occupies the next place, and all the diseases are re-named, and possibly re-spelt, it is such an

advantage and promotion to science that Eczema should be spelt with a "k." There are possibly some weak classical observations, and nearly always the article on any disease commences with a dissertation on what the ancients thought and wrote on the subject, the whole forming a bulky tome, containing as little useful information and as much repetition and rubbish as it is possible to find in the whole literature of science. To attempt to wade through such works is simply bewildering; and if you succeed, it is highly creditable to your perseverance, if not so to your perspicuity. In Hunt, on the contrary, you will find there is not much detail, but his diagnosis is simple, and his treatment plain and precise. Whether the treatment is right or wrong is a question hereafter to be noticed; but there is none of the ordinary verbiage which disfigures many works on dermatology, in which every cause that is possible is attached to a disease, and every drug or method of treatment ever mentioned given as appropriate, leaving the whole as a compilation from which you are to pick and choose. In some works, supposed specifics are decried, and their failures exposed. As an alternative, you are recommended to avoid them altogether, and "to give the right medicine in the right case;" but here the information stops, and just when you expect to receive a new revelation you find yourself left in the same state of ignorance as before.

Statistics form an important feature in derma-

tology at present, and the relative frequency of various symptoms in the sexes is carefully recorded ; in a doubtful diagnosis ; you can, therefore, assure your patient that it is five to one that it is one affection, as against ten to one it being another.

Hunt is a notable exception to the rule that every author has a fresh classification to propound, much better than the original of Willan, who simply named the different diseases according to their prominent appearances. If you feel inclined to pursue this branch of the subject, you can easily point out the weak places, unhappily too numerous, in all preceding works, and start some fresh theory, which will probably be as faulty as the others, for where the base is ignorance, the superstructure cannot be perfection.

Symptoms being continually described as diseases, the same symptoms arising from entirely different causes ; and the same cause producing different symptoms, not only in different cases, but in the same individual ; it is impossible that any classification arising on the basis of such symptoms can be of any use as a guide to the requisite treatment. From this will be seen the impossibility of any one specific remedy curing many affections, for it supposes a unanimity of cause and effect hitherto undiscovered. A peculiarity of one drug will be discussed later on in reference to this subject.

When a new medicine is discovered, and found by some one to possess admirable curative properties

in some special disorder; whilst these properties unfortunately remain generally confined to the prescriptions of the original discoverer, somebody still more enthusiastic declares that it will cure a whole range of cases from Lupus to Eczema; when this has been stated you need not give the medicine a trial at all.

Every daily variation of symptoms is named; every locality, arrangement, peculiarity, appearance, resemblance to things animate and inanimate, duration, region, age and sex, warrants a fresh designation, which is generally given with reference to what the ancients thought on the subject, and which, as it only consists of putting into indifferently manufactured Greek and Latin what might be much better expressed in English, is eminently calculated to promote the study of diseases of the skin, and to render their cure more easy.

One great advantage of this course has been the establishment of a glossary, the first step to the promulgation of a popular delusion that skin affections are to be treated upon principles quite apart from general medicine, and ought to be subjects of some special cult. You will also notice that when a disease is excessively rare, it becomes a source of great interest; and when it is very common, and most easily and certainly curable, a subject of great study; whilst lately the greatest anxiety has been shown in the affections of remote regions, about which the inhabitants know nothing,

and from whose information we are to enlighten them. There are some subjects, such as Aleppo boil, and Barbadoes leg, which form as it were the light literature of Dermatology, and are eminently fascinating in their attractions.

If you can, however, give a few post mortem examinations of cases in which there has been some decided skin affection, you will probably do more to advance their cure, for you may search all dermatological literature in vain for cases in which this has been done, and the acquaintance of the profession with the contents of the book has been always sought by elaborately contemplating and studying the binding.

If it is necessary to administer internal remedies, you must carefully distinguish between the action of the medicine, and results obtained by obedience to any alteration in habits of living, which alteration may either follow as a matter of course on the required treatment, or may be apart, though very necessary to success. A voluminous prescription is generally of more benefit to the druggist than to any one else, and its complexity is always in inverse ratio to the competency of the prescriber. No drugs should be given whose effects are mutually masked, if you wish to ascertain their effect. There is a preparation in common use, whose inventor lived before his time, it would so exactly have suited this age of divided responsibility. It consists of three metals, and not one is

responsible for its failure in curing whilst each can claim any success. These metals are Arsenic, whose action increases, requiring a diminishing dose ; Mercury, which requires an increasing dose ; and Iodine, whose action is undeterminate and uncertain ; the whole forming Donovan's solution.

Whilst you may find that the good effect of any medicine is less than you expect, you must endeavour to obtain the full effect of those in use ; and as the majority of skin diseases that require medicine have no tendency to get well of themselves, they are bad subjects for globulistic treatment. Whilst it must always be a subject of thankfulness that bad shots are only using blank cartridge, yet you may get a glimpse occasionally of a prescription by an orthodox practitioner that will make you regret that the regular armoury is not more limited.

In the following letters an attempt will be made to unite skin affections to general medicine, to point out the reasons why the various affections arise, and why they are removed or alleviated by various remedies. To cure the ordinary diseases is the great object, and not to indulge in useless speculation on cases that are so rare as only to be matters of curiosity ; and, as the most ordinary are the diseases of exudation, the next letter will commence the subject of their forms and causes.

LETTER II.

Laws of a healthy condition—Proper circulation—Results of departure from—Causes and Effects—Eczematous diseases—Erythema—E. Fugax—E. Nodosum—Formation of Scales—Pityriasis—Psoriasis or Lepra—Vesicles—Eczema Madidans—E. Vesiculosum—Pemphigus—Papules—Lichen—Impetigo—Impossibility of separation—Limitation of Remarks—Division of Eczematous Diseases—External and Internal Causes—Heat—E. Solare—Ephelis—Erythema Lœve—Musters in Patagonia—Cold—Chapped Hands—Friction—Consequences of—Erythema Paratrimma—E. ab Ictu—Soft Materials injurious—Intertrigo—Scratching—Dynamical or Chemical causes—Medicinal Irritants—Blisters—Caustics—Avocations liable to Eczema—So-called Dermatitis—Coloured garments—Baker's Itch—Sulphur Ointment—Mercurial—Eczema Mammæ—Cause and Description.

SIR,

A slight consideration of the laws under which a healthy condition of the skin exists, will show you that it depends chiefly on a proper circulation in the capillaries, which condition existing, the waste and repair constantly going on takes place unnoticed, if not imperceptibly.

Proper circulation depends on—

The impulse given to the blood by the heart, assisted by muscular pressure on the veins, and by thoracic contraction, by which impulse the blood

is propelled with sufficient but not excessive force through the vessels, the blood must also be of proper consistence and quality, and not in excess in quantity, the coats of the capillaries must be sufficiently strong to retain their contents, and the return current must be free and unimpeded.

A departure from these laws produces exudative disease, and the appearances then manifested vary accordingly as one or more of the necessary conditions are wanting, or become relatively too prominent, and are further modified by the rapidity with which the morbid influences come into action; by their persistence and duration; by sundry mechanical agencies, anatomical relations, and hydro-dynamical laws.

The blood is a fluid containing red granules, smaller indefinite granular matter, and white corpuscles, the latter being the vital or formative germs by which structure is created and waste repaired; all other formative germs being descendants of the white corpuscle.

There is a certain amount of elasticity in health, and slight variation of the rapidity with which the blood is circulated may occur without actual disease, and individuals may not agree in the rate which is proper to each; but beyond a limited permissive variation, increased rapidity, or diminished rapidity, causes disease. In disease, the white corpuscles increase in number, and the red granules decrease in number, whereas in health, the red granules

are very numerous, and the white corpuscles very few.

In infancy when formation is in full activity, in old age when the circulation is feeble and many repairs are wanting, the number of white corpuscles is much greater than in adult life, when they only have to replace waste, and perhaps lay by a certain amount of reserve force for emergencies. The white corpuscles increase in number when the circulation from any cause is either accelerated or retarded; and if they increase from any cause, they either accelerate or retard the circulation, and as the circulation may be either locally or generally disturbed, so increase of white corpuscles may either take place locally or generally; any cause therefore that affects the circulation affects the increase of formative germs.

Though the white corpuscles are vital, yet as they are membranous, and contain fluid, they are subject to the laws of Endosmosis, becoming larger and softer if the blood is watery, contracting when the blood is more dense. The red granules also swell and become soft when the blood is watery, and as they are inanimate objects, floating in a fluid, they are subject to the laws of capillary forces.

We have four states in which the white corpuscles increase in number, 1, with a quickened circulation, the blood being watery; 2, the blood containing solids in excess; 3, the blood with

excess of solids, the circulation being retarded ;
4, the latter state, with watery blood.

The result of increase of formative germs or white corpuscles is increase of tissue ; such increase of tissue having a period of greatest formation, not depending on the absolute number of germs present, but on the greatest number circulated, and on the facility with which the germs can obtain the necessary pabulum for their formative efforts ; the quantity of tissue formed increasing as the period of greatest formation is approached, decreasing as that period is departed from, whilst the actual quality and absolute quantity of the tissue formed depends upon in which of the four states the increase of white corpuscles has arisen, subject to local modifications.

You may consider the blood as containing the elements necessary to support life, and the vital germs or their descendants as the manufacturers of vital tissue from these elements, nature meeting any extra demand, not only by increasing the flow of blood to a part or generally, but also by increasing the number of germs to render that blood useful. But nature does not distinguish between the various origins from which demand arises, or by which a demand is simulated ; it treats retardation of current mechanically, and acceleration from irritation equally as demands and supplies both alike. Cutaneous exudative diseases are either the consequences of excess of formative germs, or are owing to the escape of some of the constituents of the

blood from the capillaries. You see how easily they may arise when the circulation is affected as a consequence of excessive formation, whilst the escape of fluid through the capillaries may either be secondary to the increase of formative germs, or may be more of a primary hydro-dynamical cause.

Increase of formative germs may cause at first changes internally, and continuing in excess may afterwards manifest their exuberant existence cutaneously; you then have associated with the skin disease the actual state of the blood and the internal disease which the state of the blood has caused.

You must also remember that the lower formation of all tissue is purulent, and that any excess of formative germs may terminate their existence in pus.

The excess of fluid in the system, the exudation of fluid from the capillaries, the excessive action of formative germs, or any other derangement of the functions of circulation, is not necessarily manifested cutaneously; but when it is shown externally, the appearances with which one or more of the morbid conditions are associated are called diseases of the skin. These appearances have now to be considered, and the origin of each appearance and the state of the circulation with which it is conjoined considered as a whole.

When once a departure from any special condition arises, the result is the same whatever the

original cause may have been, everything else being equal, and so we find very varying origins to the same morbid appearance.

On the other hand, the same cause may in one person or in different persons give rise to very distinct appearances, as the cause is modified by minor and possibly trivial influences.

The cutaneous affections that we have now to notice are produced by departures from the above mentioned laws; they are non-contagious, common to both sexes and all ages, and are known by the general term of Eczema, so called from the resemblance of one form to the formation and bursting of the air bubbles in the boiling of water.

When the capillaries of the skin have an excess of blood from whatever cause,—whether there is too much actively sent into them, or whether it is passively retained,—they give a distinct redness to the part or parts where that occurs; when this gorging or congestion is of a transitory character, which the elasticity of the vessels allows, and possibly assists in relieving, without further *perceptible* result, the red appearance is termed Erythema. Thus erythema must be the first stage of all diseases in which hyperæmia arises, as it is not until we see that the capillaries cannot be relieved without change, that its permanency as distinguished from its transitory nature becomes manifested.

The term Erythema may, as in that variety

called *Fugax*, or blushing; *ab Ictu* or from a blow, represent the whole of the mischief; but it is also applied to some forms of redness which are followed by desquamation, as in *Erythema Annulare*, and to one form which is accompanied by subcutaneous effusion, *Erythema Nodosum*. Here then we have a beginning of the confusion of nomenclature which disfigures dermatology, but which it is probably better to learn than to attempt to supersede.

Hyperæmia having taken place, and having remained instead of disappearing, another chain of symptoms appears.

With the ordinary supply of blood to the skin, a sufficient supply of nucleated cells is produced, to replace the constant exfoliation of the cuticle. When there is an undue retention of blood, or when there is an excessive supply circulated, there is increased formation of these cells, which have not the proper adhesiveness to one another, and which are thrown off in small or large flakes in the form of scales, the reasons of this have been already explained.

When the flakes are small and bran-like, the term *Pityriasis* is used to designate the appearance. When the scales are in larger layers, *Psoriasis* or *Lepra* are the names employed.

But instead of the excess of blood resolving itself entirely into the formation of scales, the aqueous part may exude through the vessels, and either pour out on the surface, washing the cuticle

away, or raise the epidermis into small or large vesicles.

We thus have three new diseases, Eczema Madidans or weeping sore, Eczema Vesiculosum or ordinary Eczema, and Pemphigus or large blebs or bullæ.

This aqueous exudation may occur without any previous hyperæmia, either owing to poverty of blood or weakness of the capillaries, both going generally together, or owing to obstruction to the circulation. The above scaly and moist appearances take place only on the supposition that the disease takes each line simply; in practice you will find this rarely the case, the scales being mixed with fluid products, and the vesicular forms being preceded, accompanied or followed by scales.

If instead of any of the above changes taking place there is fluid exuded into the connective tissue around the vessels raising the infiltrated skin above the surface into a papule, the term used to designate this elevation is Lichen. The vessels forming a papilla may be congested, but the appearance is papillary, not papular; a papule represents exudation with or without the papillary congestion.

The apex of the papules may either be raised into a vesicle or exfoliate as a scale.

The fluid poured out may take a purulent form; the disease is then called Impetigo, and it may contain the colouring matter of the blood from disintegrated red granules. The pus, serum, and

red particles giving various shades of yellow, red, and their compounds to either a tract or crust. All the above forms of disease are so interwoven in their cause, course, and treatment, that to do them justice they must be treated as a whole.

It would be much more convenient if possible to range each one into a separate class, and to each affix a separate cause and individual course of treatment; but this is entirely impossible, as the same symptoms arise from different causes, and you will find that whilst many writers have decried the habit of applying compound words, such as Impetigenous Eczema, to an exudation which presents the characters of the supposed two classes of Impetigo and Eczema, yet any improvement which has been suggested has lacked the boldness of declaring them all one affection; changed sometimes by external causes whose action can easily be traced, by locality where the conditions clearly point out the reason, by duration, and by internal agencies with which, if we are not sufficiently acquainted, our knowledge must be increased not by external observation, but by post mortem enquiries.

The above preliminary observations on the general characteristics of exudative disease, will be sufficient before we pass to its causes, when the principles already laid down will be more fully exemplified.

It will not be necessary in considering details to do more than notice any variety that has a

special cause, or any class that presents a special feature ; diseases of locality will only require observation when the locality entails any separate treatment, or occasions any distinct appearances ; figures of disease unconnected with any distinct complication only contribute to increase of number voluminous remarks that tend to bewilder and perplex a student.

You will find in many works such an array of the causes of Eczema as to produce a feeling of dismay ; for all purposes they may be simply divided into internal and external causes ; and the first thing you will have to do on seeing any case is to ascertain to which of these two main causes the exudation is due.

They may not be entirely distinct ; it may require the assistance of an external agency, and an internal condition, to produce the disease ; but in this event the relief of the one cause will be sufficient to remove the external appearance.

External causes may be apparently of the most trivial description ; being amongst new buildings in progress of erection will sometimes cause an eruption on the face, from the irritation arising from particles of lime resting on the skin ; but the causes may be more obvious, and the more common ones are

Heat, Cold, Mechanical and Chemical,
they are all easily traced, and they all act by producing irritation.

The only action of heat which we have at present to consider, is that produced by the sun's rays, Eczema Solare, and some cognate appearances ; burns generally being amply treated in works on general surgery.

The first and mildest action of the sun or of heat is to produce slight exudation, tinged with hæmatine ; and, the moisture being dissipated, the colouring matter is left in small patches or specks, producing freckles, or Ephelis.

These, when covering a more extended and uniform surface, constitute sunburn, or Erythema Lœve. These deposits are external to the mucous layer of the skin, being in the epidermis, and are very transitory, differing in this respect from the same deposits around varicose veins, and in parts exposed to heat for years, whether the heat has been simply that of warm apparatus under the feet, or such as exposure to furnaces.

In these cases the deposits are greater in quantity, and lie beneath the mucous layer in the true skin, and are identical with similar discolorations after specific eruptions.

The next action of heat is to produce hyperæmia terminating in some individuals as a continuous exfoliation of the epidermis or Pityriasis, or in papules. In other cases, instead of these two forms, we have vesicles or bullæ.

All the above appearances may possibly be seen at the same time, there being freckles and scales on the

face, papules on the neck, each aperture of a button marked by a vesicle, and the opening at the back of the shirt defined by a blister. Their production is not attended by much pain, and unless complicated by such additional irritants as dirt and salt water they soon subside. But some fair complexions never become insensible to the sun's rays; and Musters, in his Patagonian experiences, found it necessary to use a coating of yellow ochre as a protection, and fortunately found it effectual. In these cases the skin of the face is always in a state of incandescence, tender, and studded with patches of slightly attached scales.

The action of cold on the skin is not only to diminish the circulation, but also to stop the sebaceous secretion which is so necessary to produce softness and elasticity, under its influence the skin becomes harsh and dry, easily cracking, and from the fissures exuding serum and blood.

In some persons, whose cutaneous circulation is habitually languid, a cold wind is sufficient to start these annoyances; and a continued use of cold water in winter often gives rise to them.

If to this is added the irritation of soap, whose alkaline properties take away what little oleaginous matter there is secreted, we have very quickly produced that condition called chapped hands.

The milder appearances of slight roughness, with a few detached scales, seen as the effects of cold on the face, are replaced in chapped hands, by

smarting, tenderness and slight fissures which readily bleed; if the irritation continues there is diffused inflammation.

Cracks are sometimes produced from the same causes on the mucous membranes, and are often very tedious in their progress and difficult of cure, from the mobile nature and position of the affected parts. Pernio or chilblain, which is one form produced by cold, will receive separate consideration.

When any unusual mechanical friction is applied to the skin it causes inflammation; this may be followed by abrasion of the skin which then bleeds freely; or the congested vessels may relieve themselves by exudation raising the cuticle into a blister; which of these two forms occurs primarily depends on the amount of irritation relative to the tenderness or thickness of the skin; if neither of these arises, and the friction is continued, we have redness, followed by callosities, or scales. As a secondary result of irritation, the skin may either become destroyed leaving an ulcer, or may become thickened, indurated and insensible. The latter condition generally occurring when the parts are kept dry, and are naturally well supplied with large vascular papillæ, which require some stimulus for their full development.

All the foregoing results are easily seen after walking, riding, cricketing, and many other manual exercises and amusements, in which the skin is irritated at intervals in an unusual manner.

The redness caused by pressure, such as the first appearance of bedsores, is called *Erythema Paratrimma*, and the blush produced by a blow has been dignified with the title of *Erythema ab Ictu*. Articles worn of necessity, such as trusses, or even very soft ladies' garters, will often cause irritation, followed by induration and scales, or else a moist redness; in the former case they come under the class of *Erythems*, in the latter of *Eczems*.

A broad band of hard exfoliating cuticle on an infiltrated and somewhat inflamed base is often to be seen above a lady's knee, as the product of continued wearing of the softest garters, and shows how little is necessary to produce very tangible results. If instead of a mechanical substance, one fold of the skin is rubbed against another, the surface is kept soft by perspiration, and a muco-purulent discharge of a very offensive character is freely produced from the affected parts, which become very painful and quite raw.

This is called *Erythema*, or *Eczema Intertrigo*, and is seen at the top of the thigh, in the fold of the axilla, beneath pendant breasts, or a very pendulous abdomen. In these cases simple separation of the two surfaces is generally enough to cure the affection, but if not any astringent lotion will effect it rapidly; whether or not the parts can be sufficiently hardened to become insensible to future irritation depends upon conditions attached to each special

case, which it is impossible to discuss or allow for generally.

It is unnecessary to dilate further upon the mechanical causes of eczema, their effects may of course be complicated with those resulting from constitutional or internal causes, by which they may be intensified, and which they may to a certain extent mask. Scratching, which first elevates a papule and then removes the skin from it, leaving a scab of dried blood or serum, may always be considered as secondary to whatever causes the itching it is supposed to relieve.

Pereira makes two classes, Dynamical and Chemical, of sundry applications of an irritant nature, some of which are used medicinally. The distinction between these is not very perceptible, and their number is innumerable. Amongst the more common are mustard, croton oil, tartar emetic, and cantharides; they produce redness, papules, pustules, or blebs, according to the severity with which they are used and the sensibility or thickness of the skin, varied with the individuality or locality and state of constitution.

In a debilitated or weak constitution, a blister may cause destruction and sloughing of the skin, and the same application may only produce redness and irritation in another case, whilst in a third there may be vesication.

Some purely chemical agents dissolve or destroy the skin when used in an undiluted or concentrated

form ; amongst these caustic potash, and acetic or nitric acids are well known ; but when diluted, their action is only irritant. Soap unwashed off the skin of young babies, gives rise to redness and discharge, and this is an instance of an alkali in a weak form, whilst diluted nitric acid is sometimes used as a rubefacient.

Persons who, in pursuit of certain avocations, are obliged to immerse their hands in irritant fluids, are very liable to eczematous eruptions, to which the title of Dermatitis, or inflammation of the skin, has been applied ; why, is not apparent, for all similar affections, the result of irritation, are inflammations. These eruptions all take a papular, squamous, imperfectly vesicular or erythematous form, according to the strength of the irritant and its duration relative to the power of resistance.

Coloured articles of dress worn next the skin are sometimes capable of producing somewhat similar results, when the colouring matter, assisted by perspiration, is sufficiently irritating.

The eruptions called Baker's or Grocer's Itch, are generally constitutional ; but washerwomen, hair-dressers who use alkaline washes, barmen who clean brass taps with acids, printers who wash type, photographers, &c., are all likely to be subject to these forms of Eczema.

Substances used as a means of cure will occasionally produce a more formidable eruption than that for which they are applied, notably sulphur

ointment. The inunction of mercurial ointment has frequently to be discontinued, from the great irritation it occasions ; the pain being very severe ; the absorbing qualities of the skin being also reduced.

The actual changes that take place as consequences of external irritation are, simply increase of formative germs and exfoliation without any perceptible redness, exfoliation after or consonant with redness ; stoppage of the capillaries by excess of blood and exudation of the fluid part of the blood, carrying with it many of the formative germs, and raising the part into a papule if the epidermis remains attached, into a vesicle if it be separated from its basement membrane, or into a blister if the separation is of greater extent.

It only remains, before closing this subject, to describe a very common and exceedingly painful affection, caused by suckling a child, and known to nurses and mothers as sore nipples, to the profession as *Eczema Mammæ*. The best precautions taken in the last months of pregnancy will not entirely prevent this affection, though in all cases it will render it less troublesome ; but the parts affected do not attain their full development until the child is born, and has sucked some little time. This disease occurs soon after the child begins to be nourished, when the membrane covering the nipple becomes sore, raw and cracked under the unusual irritation, producing most exquisite pain, and becom-

ing, later on, sometimes complicated with small superficial abscesses in the neighbouring parts. The nipple being erectile is one source of difficulty in its treatment; the other being that we are required to cure the effect allowing the cause to continue. The remark made in one work on skin diseases, that it is best treated when the child is weaned, is so far true, that if the child is weaned no treatment is necessary. But to allow the mother to nurse, which she will do generally most perseveringly, even with the nipple half severed from the breast, and yet to cure the sore, is what is required of the attendant, and the numerous remedies in use show the difficulty of the task. Any strong applications will remove the whole covering membrane, and increase the suffering, and it is only when small ulcers have formed that they should be applied, and then most cautiously. The moisture that exudes from the nipple itself, and the constant traction and irritation of the child's mouth, remove most applications before they have had time to do any good as a remedy. As women grow older, and have a numerous family, the danger of this disease arising is diminished; but few, however, entirely escape some painful moments in the early months of nursing. As the baby grows older, the mother will sometimes go to sleep with the child at the breast, and the latter, though not sucking, may by continued nibbling cause a raw place that the increased strength and age of the baby

makes more difficult to remedy, though there are some compensating circumstances.

The continual discharge from a sore, such as cancer, may by its irritation cause inflammation, or eczema of the tract of skin over which it flows, and as this borders on the constitutional forms of exudation, it naturally leads to their next consideration.

LETTER III.

Internal causes—Deficient Impetus—Excessive Impetus—Anæmia
 Plethora—Irritation—Imperfect Oxygenation—Obstruction—
 Mechanical causes of Dropsy—Cardiac Eczema: Renal:
 Hepatic — Debility — Nervous — Acute Eczema: Lichen
 Agrius: Lichen Tropicus — Acute Pemphigos — Papular Ec-
 zema—Copaiba—Colchium—Post Mortem—Scales—Distinc-
 tion attempted—Psoriasis Palmaris—Erythema Circinatum:
 Nodosum: Lœve—Psoriasis Nigricans—Erythema Iris—Ery-
 thema Linguae—Chronic Eczema: Infantile: Crusta Lactea—
 Impetigo — Pityriasis Rubra: Universalis — Eczema Oculi:
 Nasi: Aurium: Marginatum: Psoriasis — Guttata: Num-
 mularis: Gyrate—Anæmic Eczema: Vesicular.

SIR—

The last letter concluded with a notice of an external result from a constitutional cause of the most patent description. But there are results of which the internal causes are not so easily traced, but which you must endeavour to ascertain.

If the circulation is deficient in force, exudation may follow, the blood becoming congested, a result usually determined locally by some outward agencies.

If the impetus is excessive, a similar state of the capillaries arises from their inability to allow the increased volume of fluid to pass through them.

The former cause is constantly associated with anæmia, or poverty of blood, and with this state there is increase and enlargement of the white corpuscles, and weakness of the capillary coats, which allow the impeded fluid contents to escape more easily. Excessive force may or may not be associated with plethora, or excessive quantity of fluid; and that excessive quantity may be simply due to non-elimination of water, or be caused by stoppage of some sanguineous flux.

The quality of the blood may likewise be changed by the presence of some irritant, which is sufficient to cause exudation, whether the irritation is accompanied by acceleration or depression of the pulse; the reasons have been before mentioned.

Imperfect oxygenation of the blood is a very frequent cause of eczema, the white corpuscles, being more numerous, swollen and flaccid, impede the current. Any of the above causes may be associated with the next class, in which mechanical obstruction is the obvious agent; if this obstruction is joined to anæmia, the result is vesicular or moist eruption; if to the opposite condition, a scaly formation prevails. It is a matter of consideration, sometimes, which is the origin of the disease, whether with an internal torpidity and an external congestion they are both due to one and the same cause, or if the first alone produces the cutaneous symptoms.

Mechanical obstruction may be local, associated with some enlargement of the vessels, in which a

passive state of exudation arises; or it may be caused by pressure of a temporary or permanent character, either on the veins of a part, or on some large venous trunk. In the two latter cases, eczema may be active or passive, according as the circulation is vigorous or languid.

Any of the causes which produce dropsy may produce eczema, the circulation being relieved by the skin, instead of exuding internally into a serous cavity or the areolar tissue.

Cardiac eczema sometimes occurs, as the heart affects the rapidity of the circulation; the cardiac symptoms may be functional, and caused by a state that will equally produce the cutaneous eruption; organic disease only acts mechanically indirectly, apart from the first-named action.

Renal eczema is a common disease, and is always of a temporary or acute nature. The bulk of the kidneys is not sufficient to cause congestion therein to act mechanically; whilst any prolonged derangement of their functions gives rise to diseases that take precedence of cutaneous lesions.

Hepatic eczema is the most frequent form of exudation; compatible with an extended period of life, intermittent in its results as more or less derangement exists, its duration permits every variety of formation on the skin to reach a full development, and the growth of the liver is occasioned by the same causes that lead to the cutaneous disease.

All these causes which, when in full action, cause dropsy, may produce cutaneous exudation at a very early period of their existence, and, as the increase of such causes is not of necessity continuous, eczema may be the only symptom of their existence, and may be intermittent in its appearance.

The above remarks contain all the causes of exudation, but it may happen that you are unable to trace any definite source of mischief. You then have two courses open, one is to call the disease, debility, and the other, nervous.

As all disease is debility, you cannot go wrong in applying the term, and if it conveys little information to the patient, he may still know as much as you do.

To say that any exudative affection is nervous, is the last resource of ignorance, and should be reserved for solemn occasions only. It will do little credit to your powers of invention if you cannot prove every exudative disease nervous, and it is an assertion equally easy to make, and impossible to disprove.

What you certainly have in these cases is an excessive number of white corpuscles, and what you may not be able to find out is the cause of such excess.

We will now proceed to consider the different varieties of Eczema, commencing with Acute General Eczema; the word acute being taken to represent that state produced by a temporary but sufficiently

strong cause; this disease may arise in various ways, one being that produced by a sudden chill, or exposure to cold. By this the excretory cutaneous action receives a sudden check, the kidneys decline the necessary compensatory increased action which would give relief, in fact they may strike altogether from over work, and thus an excess of fluid is retained in the circulation, resulting in an effusion from the cutaneous capillaries, which may or may not be preceded by congested papillæ. We thus have an eruption of vesicles or papules, or generally both. The whole process is accompanied by a certain undeterminate amount of fever, and constitutes acute eczema. If the fever is slight, and the papular form predominate, the appearance is named *Lichen Agrius*.

Another acute form of eczema is produced by a reversal of the above causes. When a person is exposed to unusual heat, leading to unwonted repose, or absence of exertion, whilst the food taken is more suitable to a cold climate, we have excessive cutaneous stimulation, elimination of a greater quantity of fluid than is usual, and a lethargic state of the liver, resulting in a rash exactly similar to that of acute eczema, but from its activity, accompanied by a greater degree of irritation, this is called *Lichen Tropicus*, or prickly heat. Several medical men have been sufferers from this complaint, and have left very interesting descriptions of their feelings during its attacks. You will find

that if a person takes proper exercise and diet, suitable to the altered external conditions of temperature, he generally escapes the affection.

If, in addition to the first named state of causes, we have an obstructed return current, the venous system being stopped at some important point, you get what you would naturally expect, rapid effusion over a larger surface, and the cuticle, instead of being raised into more or less perfect vesicles, is distended into bullæ or blebs, forming Acute Pemphigus.

Acute Papular Eczema is also caused by various substances, which produce, by their absorption and admixture with the blood, irritation generally in the system; it is not necessary that there should be great febrile action to produce this result, as it may be the secondary effect of want of power and depression, combined with the irritant action.

The action of balsam of copaiba is an instance of the first, as it causes increased action of the pulse. When taken for some time, or in increasing doses, the papular eruption may come out most plentifully, accompanied by great redness and itching.

Colchicum, on the other hand, is a drug that gives the papular eruption with great depression; there is then less itching, and altogether the eruption is wanting in vigour.

In a fatal case of colchicum poisoning, the eruption only appeared on the second day, being pre-

ceded by great purging and vomiting; a post mortem disclosed only a slight patch of inflammation on the surface of the small intestine.

It is not necessary to give any more examples of this class of causes of exudation; peculiar idiosyncrasies may exist in which the simplest articles of food or medicine cause an eruption of an exudative nature; the circulation being disturbed exudation easily follows.

The Scaly forms of Eczema are generally passive, though there may be considerable activity over a limited surface.

There has been an attempt made to distinguish between an exfoliation of healthy, and that of diseased, epidermis. Any epidermis at first exfoliated must be healthy, but afterwards it must be diseased or imperfectly formed cuticle, if the disease has been continuous, or unless there has been a sufficient intermission of morbid action to allow a perfect re-formation of cuticle.

If the epidermis is very thick and firmly attached, an exudation which would otherwise take the form of vesicles has not sufficient force to remove the outer covering, and then this is left thickened, until, by gradual infiltration between the layers, it is thrown off at length as a large tough scale. This is very easily watched in some cases of so called Psoriasis Palmaris, which are only modifications of vesicular eczema.

Before, however, considering the chronic forms

of eczema, it will be as well to notice those eruptions, of an erythematous class, which deserve special mention.

Erythema, as has been before stated, is usually either only the first or congestive stage of an inflammatory condition, or else a transient appearance, but it is also applied to some tolerably permanent forms.

Broad bands of redness, assuming either a perfectly circular form, or else those figures which broken segments, either distinct or irregularly joined, would produce, have been termed Erythema Circinatum; the colour is a dull deep red, and the congested skin throws off slowly epithelial scales.

Erythema Nodosum is an elevation of the skin into nodules, of more or less extent, generally seen on the shins of young women, the swelling being caused by subcutaneous effusion, which gives a smooth pulpy sensation to the touch, with a varying light red blush on the surface. It is accompanied by slight febrile symptoms, swelling of the feet and ancles, and a somewhat anæmic condition. There is also frequently associated with erythema nodosum, menstrual derangement, a complication you must always investigate in any exudation affecting females, for if not originally the cause, disordered uterine functions may assist in perpetuating a disorder otherwise arising, or may give a permanent character to affections whose appearances without such assistance would be intermittent. You will

see, therefore, that an enquiry as to healthy menstruation should always be made in forming your diagnosis.

Erythema Lœve, applied to some stains produced by heat, is a name also given to the stains of a reddish brown colour surrounding varicose veins; the blood being delayed in its course in these veins, some of the serum tinged with hæmatine exudes through the coats of the adjacent capillaries, and the fluids being absorbed, the stain remains. These stains are also seen when the veins are not very prominent, and are of constant occurrence on the legs of elderly persons. There is an evolution of scales on the stained surface, when of long continuance, and if the desquamation is sufficient to cause a Psoriasis, the dark appearance given by the veins and their surroundings causes the eruption to be termed Psoriasis or Lepra, Nigricans.

An effusion more nearly sanguineous, almost amounting to an extravasation, takes place sometimes in erythematous and other forms of exudation; the gradual absorption of this produces a varied discoloration that is compared to a rainbow, and is called Erythema Iris.

The formation of a deep seated abscess may be accompanied by an erythematous blush on the surface of the skin; and a gouty tendency sometimes makes its unwelcome presence known by a swelling of the tongue, called Erythema Linguae.

The causes of chronic constitutional eczema are

the same as those of acute eczema from internal changes ; like the latter, it presents all forms of papules, vesicles, and scales, accordingly as the action is slow, and as external influences modify the eruption. It is essentially a disease of transition between health and serious illness, being an outward visible sign of internal changes detectible or not.

One of the most common forms is that of Infantile Eczema, in which the epidermis is washed away from the face or head, and they are then covered with a discharging surface, or the results of such discharge, a perfect vesicle never having been formed.

This state of running sores forms the *Porrigo* of old writers, and the crust was called *Crusta Lactea*. These crusts present many colours, accordingly as the purulent and sanguineous elements are mixed, in greater or less proportions, with the serum. The ears, and the fissures behind them, are often the spots where the discharge commences, but it has not any marked preference ; the conditions of its existence once arising, it breaks out anywhere indifferently where the skin is thin. If the patient is older, we then have vesicles distinctly formed, and, if on the face, they appear countersunk in the skin, and the larger ones may retain their contents until they become purulent, forming *Impetigo*. The rapidity with which the formation of pus takes place varies greatly, but *Impetigo*, in all its varieties, is

merely a purulent Eczema. When an Eczem of the face in children attacks the organs of sight, there may be great inflammation of the eye and its appendages, and even ulceration of the cornea. But the scalp at all ages may be attacked with a much less marked condition, first noticed only by increased formation of scurf; at last becoming tender, there is found a red surface, either continuous or in punctæ, and this red surface or surfaces desquamate freely; this is Pityriasis of the scalp, and it may run thence over the face in a horizontal line, as though a veil had been drawn over the countenance, and spread over the neck, body, and extremities, the colour being a dull reddish brown, from which small scales are being continually thrown off; this, which is a form of squamous eczema, has been called Pityriasis Rubra, and if the whole body is attacked, Pityriasis Universalis.

You will occasionally see an erythematous appearance around one or both eyes; if the eyelids are involved, there is great effusion into their loose tissue, giving the patient the appearance of a very black eye. There are no punctæ to be seen, no discharge, and no scales, but it is the earliest symptom of an eczem, and you must be prompt in your treatment; a similar appearance arises around one or both nostrils, or on the nose itself, making the hair follicles very prominent, and, if in a pallid complexion, bringing that organ into disagreeable notice. As a consequence of the slight

inflammation, there may be very considerable discharge of serum from the stimulated glands, and this forms a yellowish crust on the nose, either in one mass, or in little nodulated granules.

The eczems that spreading over the edge of the nostrils, or into the meatus of the ear, cause great soreness, and perhaps slight ulceration, are complications you may expect in chronic or neglected cases. The lips, umbilicus, breasts, nipple, penis and scrotum are all liable to eczematous eruptions, but they offer no special subjects for remark, the inflammation producing, if continued, thickening, and the determinate form being changed as the tendency is to a moist or dry flux, and as the external conditions of heat, cold, and moisture, are in the ascendancy, with motion, friction, and repose. Where there is a special secretion, as in the meatus of the ear or on the edges of the eyelids, any exudation is mixed up with that secretion, as long as the inflammation is slight the glands being stimulated, a greater degree of the inflammatory symptoms causing the glands to cease secreting.

Hence we sometimes see eczema of the eyelids mistaken for *Tenia Tarsi*, and eczema about the chin and lips for *Sycosis*, the purulent forms having some resemblance to the latter disease, though there are special characteristics of *sycosis* very different from the superficial character of eczema.

Eczema Marginatum is a rare parasitic disease, which will afterwards be mentioned.

Eczema of the palms of the hands, and soles of the feet, has been called Psoriasis, though the name of that form of exudation, beginning as a congestion of the capillaries, is never seen on either one of those spots, for reasons now to be discussed. A patient will consult you for redness and irritation in some spot, say the flexure of the elbow. On examination you find very slight redness, confined to small punctæ, somewhat indurated beneath the cuticle, which is slightly raised; as the case progresses, these punctæ become more numerous, and, gradually joining together with a diffused blush, the skin becomes elevated over a considerable tract, and the cuticle is thrown off, gradually leaving the surface covered with a thin scale. Other parts become affected, and go through the same course, the deep purplish red colour somewhat subsides, and the affected surface then exfoliates freely in large translucent scales, the skin underneath being thickened and infiltrated; this is Psoriasis Inveterata. This disease may also begin by a simultaneous eruption of small points, on which the scales are seen in layers, and these points may be the size of a drop of water, or a sixpence, or may be in the form of segments of a circle, irregularly joined together, and these three appearances are named Psoriasis Guttata, Psoriasis Nummularis, and Psoriasis Gyrata respectively; if these coalesce we have Inveterata again, the principal symptom you will notice being, that the scales always cover a con-

gested surface, though the individual plexus may not be so distinct as in the first case mentioned, and that the scaly formation is less active when the congestion is very slight, or very great when the surface underneath the scales is only just a blush, or so deeply coloured as to present a purple hue.

This eruption, commencing with congestion with capillary enlargement, naturally cannot occur where the skin is thick and firmly attached to the muscles, and in situations where there is considerable motion; and therefore you will never see it on the palms of the hands, or soles of the feet, and very rarely on the face proper, though the forehead is not entirely exempt.

When the blood is very thin and deficient in blood corpuscles, with the general anæmic state, you have sometimes great cutaneous debility. This is seen in extreme cases in almost total absence of hair, a few locks on the scalp being all the entire body can show; with this there is a moist eczema most distressing to the patient. It may only be a few scales on the back of the neck, but the buttocks, perinæum, thighs, legs and arms are seats of a weeping raw surface, exquisitely irritable and tender. On going to bed with a shin untouched, the morning will disclose a patch several inches square, red and discharging freely, the cuticle having been as it were washed away. In these cases, which may last for years, the palms of the hands only present a thickened appearance, the

poor blood, imperfectly circulated, has only succeeded in those localities in producing that state of congestion which is consonant with increased scale formation; and as it is the last symptom to appear, so it is the first to go; when the case takes a favourable turn afterwards the weeping surfaces become scaly, and finally the disease disappears. You may also have cases in which the liver is congested, the skin and kidneys inactive, and the whole body sodden with accumulated fluid, which will neither make its exit internally nor externally; the patient looks as though he could be tapped anywhere, and the extremities readily swell. The palmar and plantar surfaces, in such cases, cannot resist the continual fluid pressure, but they do so under protest.

You will then see on the surfaces the following symptoms; the cuticle is gradually thickened, and loosened by the contents of vesicles broken in attempting to raise it. Fresh vesicles, distinctly visible, then rising under the more delicate epithelial layer, complete the detachment of the hardened surface. These vesicles, when on the extremities of the fingers, may be seen through the transparent epidermis, like shot, in the substance of the skin; they may also be seen to disappear, either by absorption, in which case no ulterior change takes place, or they apparently break, becoming diffused beneath the cuticle, causing it to peel off. When once the cuticle

is detached, the moist stage does not last; on the contrary, the surface becomes red, dry, and painful; slight thin scales are formed, and, the tense surface cracking in many directions, with the muscular movements, fluid exudes and the hand is quite useless. Now this is a very bad case; in milder forms you have simply thickening of the palm of one or both hands, with or without other eczematous signs on one or both shins or feet. This thickening comes and goes; any intemperate excess causes it to become worse, and care improves its condition.

LETTER IV.

Passive Eczema—Hæmorrhoidal—Rhagades—Eczema Pudendi—
 Varieties — Tumours — Acute Pemphigus — Chronic Case —
 Foliaceous — Miliaria — Sudamina — Poulticing — Teething —
 Uterine Eczema—Lichen Urticatus—Diagnosis of Exuda-
 tion—Specific Disease—Scabies—Pediculi—Recapitulation—
 Observations.

SIR,

Resuming the consideration of passive eczema, we see it constantly accompanying hæmorrhoids; in these cases we have detention of the blood in the enlarged veins, and in addition there is always derangement of the liver; as a consequence of this state of things, there is the coloured exudation, similar to that round varicose veins elsewhere, and also frequently a moist discharge, accompanied by soreness and fissures (Rhagades) in the mucous membrane bordering on the skin, the moisture collecting in the folds peculiar to the part.

In females there is another form called Eczema Pudendi, which may be either temporary or permanent. In persons who have married early in life, when two or three months of pregnancy have elapsed, the enlarging uterus presses on some veins retarding the circulation; the first symptom felt

of the eczema is great irritation of the inner surface of the labiæ and intervening surface; the slightest scratching produces great discharge. The parts become swollen, red, and very painful, with most unbearable irritation; scratching, by allowing some of the serum and blood to escape, gives slight relief, but the discharge mats all the hair surrounding this region together, and the natural warmth and softness of all the affected parts, and their situation, render applications difficult to apply, to retain, and of only temporary value. It is probable that this state of things would occur without scratching, but you will never see it before this has taken place. Women may only be subject to this disease in their earlier pregnancies, or they may always have it. In the former case the parts become developed, and the pressure consequently less. After a few weeks of this deplorable condition, when the patient is worn out by the continued distress, and the practitioner is at the end of his resources, the womb rises into the abdomen and the disease disappears. This temporary affection, confined to childbearing, shows what the state of things is in those other cases in which females suffer from a similar eczem, only instead of the uterus the liver is the peccant organ, and if the cause is more permanent, being less active, the treatment is more easy, if not altogether effectual. It also points out the effects that pressure from disease of any of the internal generative organs may produce, or, in fact, any

obstruction, temporary or permanent, in the passage of the venous circulation. As an example of this, we have those affections in which, the liver being obstructed, the watery parts of the blood are effused over a considerable patch, raising the skin into blebs or bullæ; this has been mentioned before, and these diseases, acute or active, chronic or passive, are called Pemphigus. In acute pemphigus you have an eruption of bullæ on various parts of the body; they rise suddenly, without any pain, and may number a dozen, varying in size from a shilling to half-a-crown. The skin underneath may be slightly red, the blebs are fully distended at first, and generally quite clear and pellucid, though the blebs in all forms may be filled with blood. As constitutional symptoms, there are slight fever, a furred tongue, inactive kidneys, torpid liver, confined bowels, and hot dry skin. The watery particles gradually evaporate through the distended cuticle, the diminishing fluid becoming opaque, and the blebs finally become dry, leaving the cuticle in folds on the spot whence the exudation has proceeded, giving an appearance to which the term foliaceous has been applied. Another form of pemphigus is more chronic and passive; the constitutional symptoms are very slight, the bullæ are never fully distended, and the parts whence they arise are more red; it is then simply an eczema that has been modified by slight causes, and instead of an oozing, or crop of vesicles, there are one or more blebs. In children

pemphigus is seen in great perfection ; there is the solitary large bleb, called pompholyx, several inches in diameter, whose base is more or less inflamed ; a smaller bleb or blister, with no inflammation at all, not above the size of a shilling, rising at irregular periods, and being a sort of warning of internal mischief ; and lastly, the well marked cases of chronic pemphigus that have lasted for months, one of which will now be described.

The child is puffed, pasty, and pallid ; the face has patches of exudation of mingled serum and blood, dried and moist, showing at the edges vesicles the size of swan shot. The tongue is fissured and white, covered with the little circles of elevated epithelium, the remnants of broken vesicles ; the body and extremities show large tracts of red congested skin ; arising indifferently from these tracts and from the sound skin are bullæ in all periods of distention and opacity—those that are quite fresh and on the sound places are as bright as crystal, and look like walnuts of glass stuck on the body ; when they are on the reddened parts the membrane is thinner, and the base gives them a reflected pink tinge. On parts that have had numerous eruptions of blebs the formation is no longer perfect, and instead we have crusts in which blood is a large item. These crusts are more or less moist, and their edges show vesicular efforts. On all parts are blebs dying away, shrivelling or shrivelled, and the old epidermis lies in folds more

or less detached and perfect. Where the eruption has taken place on parts liable to friction or motion, there is a raw, sore, inflamed surface, freely discharging a semi-purulent fluid, and even around some of the small bullæ there may be a narrow ring of inflammation. The bowels are confined, the evacuations light coloured, and the urine turbid and scanty.

If you read many of the notices of this disease, you will see how little authors dwell on the subject; however they begin, they soon branch off into the consideration of specific disorders with which pemphigus has no relation, no similarity in origin, appearances, progress or result.

When there is any constitutional disturbance of a febrile character, very little external assistance is necessary to produce a cutaneous exudation; the little vesicles arising when the body is confined in bed, and kept moist by perspiration, are known by the name of miliaria and sudamina; whilst the pustules that arise under the influence of continued poulticing show a familiar example of the facility with which serum becomes replaced by pus.

The process of teething in children is a very common source of exudation, by the general disturbance it occasions; the eruption is generally papular, pallid or bright red; accompanied by erythematous rashes, or standing out quite distinct from the skin; the general symptoms equally vary, there being constipation, purging, or irregularity of the bowels, with more or less fever.

The uterus is frequently a source of exudative disease, whether irregularity of its action is only a part of general or other disease, or whether it is itself the primary cause of all the mischief. It has a tendency to produce, when irritated, wheals or urticaria on the surface. If then there is delay in the appearance of the menstrual flux, or if this is restrained in its flow, there are two actions, one the gorged venous circulation, the other the irritation of the uterus. The result of the two is a rash, compounded of papulæ and wheals, called *Lichen Urticatus*; the wheal in this case is small, imperfectly defined, and irregular, the base being surrounded by an erythematous blush, which, when the elevation of the wheal has gone down, remains to mark the spot.

This eruption may occur at every menstrual period, and is a source of great trouble and annoyance to the patients, though itching is a very variable symptom, in some cases being almost entirely absent. From such cases we can trace the probable causes of *Lichen Urticatus* in others where there is no uterus, or uterine origin, the compound being clearly congestion and irritation.

It would be only increasing the length of this letter to give you all the names with which exudative diseases have been honoured, and therefore the diagnosis of these diseases is the next subject. If you do not know by sight the applications of the terms squamous, papular,

vesicular, bullous and weeping, an hour at any public institution for the cure of skin affections will make you quite conversant with them ; reading a volume on the subject could not do more, if as much. Now the great division of the exudative diseases is into two classes, those in which the exudation is produced by a specific poison, and those in which it is not. The general aspect of specific eruptions is squamous or tubercular, and the general characteristic is the brownish discoloration with which they are accompanied. If there are papules, these papules have a paler hue than in the non-specific variety, and they are generally mixed with larger exudations of the tubercular description. The specific eruptions are also very various in the same case, and though they are often preceded by intense itching, when no eruption is to be seen, and accompanied during their progress by some itching, yet this is not a marked feature in their course. The squamous forms do not exfoliate so quickly as the non-specific ; there is no activity in the process ; and in addition to the above, there is the history of the case and sundry symptoms, such as mucous tubercles on the tongue, or ulceration of the throat, which render the diagnosis quite plain. If you have both specific and non-specific disease present, the former will disappear under proper treatment, and leave the latter unmasked, though the two affections render the cure of either more difficult.

There is one variety of eczema that is seen on

the palmar and plantar surfaces, that in some stages, the brown tinge being imperceptible, it is almost impossible to distinguish from the specific disease attacking the same locality; with a little watching, the case will soon however develop some other signs, sufficient to guide you in the diagnosis, even if the history obtainable is like many histories, not very correct, and the body is otherwise quite free from outward signs. There is one especial point to be guarded against, and that is, not to overlook the existence of either scabies or vermin. Scabies will produce every variety of exudation, and parasites of the animal kind may give rise to appearances, with the assistance of scratching, that are at times somewhat perplexing. The principal sign of scabies is its intense itching, and if the eruption is so great that the peculiar signs of the *acarus* are undistinguishable where the part is most affected, a careful examination of the outlying districts will elucidate the case.

The next letter will continue the subject of the exudative diseases already mentioned, with such further observations on their cause and progress as may be necessary to guide you in your endeavours to alleviate or cure them.

However, before concluding, it is as well to recapitulate the prominent points of these affections. It is entirely immaterial what form, vesicular, papular, pustular, squamous, or bullous, an exudation presents, an external agency or local peculiarity

will change and modify them all. Still less in importance is the figure of an eruption; dermatology is certainly burdened with an immense mass of nomenclature on the subject, but whilst writers on general medicine can justly blame dermatologists, it is as well to enquire if, in every branch of medicine, minutiae have not been greedily accumulated, until the broad outlines of treatment have become obscure under a cloud of useless details; and also to point out that the skin has been an especial sufferer by the readiness with which dermatological foundlings have become the children of adoption of general medicine; and cutaneous distinctions, which in any other diseases would have been scouted as absurd, have been readily acknowledged by the heads of the profession.

The actual occurrences in all exudations consist of an accumulation of blood in a locality with increase of formative germs; if the blood is very thin, these germs pass away with the watery particles; if the blood is very thick, they are retained, and, being freely nourished, form tissue freely; between these two extremes there is every gradation, and all formations are liable to take the lower existence of pus.

LETTER V.

Treatment of Eczema — External — Internal — Oleaginous — Astringent — Blistered Feet — Intertrigo — Bedsores — Irritants — Sore Nipples — Eczema Infantile, Teething — Foul Air — Imperfect Oxygenation — Liver, in Infancy, in Adolescence, difficulties attendant on examination, Rarely investigated — P.M. — Pulmonary Congestion in Childhood — Recapitulation — Conditions of successful treatment.

SIR,

The treatment of exudative diseases is divided into two branches, external applications and internal remedies ; the former are the only ones necessary when the disease proceeds from external causes ; but when the cause is internal, any outward application can only be palliative, and an adjunct to the main treatment.

The various external agents are either oleaginous or astringent ; the former acting as a soothing protection, and the latter hardening the surface. Glycerine, for the discovery of whose merits the profession is indebted to Mr. Startin, has a special action, that of stimulating the sebaceous secretion. For the various effects of heat and cold, in the limited degree to which your attention has already

been called, any unguent is a sufficient remedy ; if the hands are chapped, glycerine applied at night and retained by a glove will remove the irritation by morning ; and for the various facial eruptions produced by exposure, the numerous compounds of lard with a perfume are most agreeable remedies, and if the skin has proceeded to vesication, the zinc ointment by absorbing the moisture is effectual.

When the cause is mechanical friction, the parts may gradually harden as in the hand and feet ; any accidental cause being of course removed. If a blister is raised the elevated skin should not be disturbed, the fluid being carefully let out by a worsted thread. In softer localities, where the cause has been temporary, any mineral astringent, as acetate of lead, or sulphate of zinc, applied in solution, will give almost instantaneous relief.

If the friction be between parts, as beneath the fold of a pendent breast, a strip of lint dipped in such lotion is useful, and it may be necessary to keep the parts asunder by some soft material afterwards. Mechanical irritation, similar to that produced by a badly fitting truss, may render it necessary to remove this cause for a time, until the skin has recovered its surface, which surface you must endeavour to harden by astringents ; and by a judicious application of padding prevent too great pressure and friction on one part, as the point of greatest irritation can be changed by transposition of the intervening material.

The formation of bed-sores from long continued pressure may be prevented by the use of a water-bed; but, as they arise in long continued illness apart from skin diseases, they scarcely come within the bounds of the present remarks. Where the irritation is produced by discharge from a sore, silver paper dipped in white of egg, isinglass plaister, or collodion may be used; the latter is also of service in cracked lips from exposure to cold.

The effects of chemical irritants can be to some extent prevented, by the use of oleaginous substances, before and after exposure to the irritant. Lard or oil, applied on the face or hands, will neutralise for a certain time a small quantity of alkali, and a less portion of acid, but the effect is not durable, and friction removes all protective power. The inflammation produced by coloured articles of dress is best removed by a poultice, and, no further cause remaining, the parts get well rapidly.

With respect to *Eczema Mammæ*, or sore nipples, the various remedies in vogue testify to the difficulty of curing an irritation, the irritant remaining in action. When small ulcers are present, they may be touched with a solution of lunar caustic, but this must be done carefully; collodion will often remove all the mucous membrane, besides being a very painful application to a sore. If there are cracks and fissures, these open by the traction of the child's sucking, and this traction, with the moisture

exuding from the nipple and child's mouth, removes most applications before they can do any good.

There are two ways of treatment, one in which the fissure is allowed to heal from the bottom by granulation, and the other in which the parts are kept in apposition from the first and adhere by first intention. If the former plan be decided upon, the parts should be washed in spirits, salt and water, every time the child is nursed; they then should be dusted with powdered gum, and protected from friction, and the nipple kept erect, by a glass shield—not one of those heavy, cumbersome shields, generally sold in shops, which look more adapted for a missile, than to be applied on a breast. This course of treatment, carefully and continuously carried on, will ultimately prove successful. If an endeavour is to be made to heal the sore at once,—and it is generally worth the attempt,—equal parts of bees' wax and suet melted together, and applied warm, may be sufficient; or a strong solution of isinglass repeatedly applied, until a thick layer is formed. But the best remedy of all is a solution of india rubber, which, applied when the parts are quite dry, and over a sufficiently large surface of the breast to allow the patient's fingers to retain the edges during the act of suckling, possesses the requisite requirements of elasticity to remain attached, and impermeability to the air when adherent, under which the parts quickly heal. This affection, if not

altogether preventible, may be reduced to a minimum, by care in hardening the nipples during the last weeks of pregnancy.

This last subject has been discussed more fully, because it is very common and very troublesome, and it will bring you into collision with old women and nurses, who each have their own specific. As it is the only exudation from external causes that presents any difficulty in curing, it has not received from most authors any notice, or not more than a few lines, you can, if you like, discover that a ferro-arsenical mixture is efficacious in these cases, and so rise into an eminent dermatologist at once.

We now come to the consideration of those exudative diseases whose causes are internal, and, for the study of their treatment, some of the ground over which we have already been may have to be retraversed.

A child is brought to you, on whose head and face there are crusts of considerable thickness, and varying moisture. They may be hardened or soft, purulent or bloody, if near the mouth, crying may cause the blood to pour down over the child's clothes; or the skin may be elevated into vesicles, imperfect, perfect, or pustular. A poultice of bread and water, to which a little soda has been added, renders the crusts easily removable, and then the skin is seen pale, red, or raw, according as the flux is in active operation, or has ceased to discharge, and if very active the fluid, more or less

purulent, is seen oozing from minute orifices. If there is much hair it is matted together, and it may swarm with lice, and be studded with their ova.

The treatment for this state, after the thick crusts have been removed, is the Stavesacre ointment to destroy lice, and afterwards, or at first if there are no pediculi, the Benzoated Zinc ointment. This treatment will nearly always cause the skin to become natural, and then you have done all you can externally. To send a child away with simply the flux stopped, is to relegate it to the influence of more disease, and therefore you have to enquire into the cause of the eruption, with a view of preventing its recurrence.

If the child is at the breast, you must examine the mother, and ascertain that she is healthy, and that her supply of milk is good and nutritious ; if no source of the disease is maternal, or if the child is fed, that the food given is of proper quantity, quality, and judiciously administered. You then enquire if the bowels of the child are regular, if the evacuations are natural, and if the kidneys are doing their duty and the bladder is emptied without pain.

If the child is old enough the growth of the teeth is the next point, and a very important point, for to neglect in lancing children's gums the great mortality from convulsions is entirely attributable, apart from their being a source of exudative disease.

If there is any suspicion even of dental irritation, with your gum lancet you must relieve the tension. There is a great prejudice amongst some mothers, and even practitioners, against lancing the gums, why or wherefore is perfectly inexplicable. You may see a child lying perfectly insensible on its mother's knee, with twelve or fourteen teeth shining through the hardened gum, and yet mother and attendant agreeing that "it is not the teeth."

Some talk about a cicatrix forming, rendering teething afterwards more difficult; well if so, the gum must be as much wider as the thickness of the cicatrix. But is this true about the cicatrix? does a hard one ever form? to me it has as yet been invisible; and if there is none, on what grounds can anyone allow a child to suffer intense relievable pain? or if there should be a cicatrix, is that a sufficient reason for doing nothing to remove the existing irritation?

Having investigated all the foregoing sources of eczema, and finding either that they are non-existent, or having met them with the appropriate treatment in vain, what other cause are you to look for? The most probable, as it is the most potent and common, is foul air. This may arise from imperfect drainage, a leaking sewer or one stopped up, as well as from no sewer at all. You will be able to map out, from cases of this form of disease, courts, streets, and even districts in a large town, in which either the sewerage is deranged, or the houses

have been built without cellars, the floors being only separated a few inches from ground undrained, or made up of the refuse of years. The over-crowding of rooms amongst the poor, and the return of foul air through main drainage pipes, amongst palatial residences, with occasionally startling results, both lead to the same result, imperfect oxygenation of the blood, which is a most rapid cause of infantile eczema, quite independent of the depression of vitality caused by the pure air being replaced by a poisonous atmosphere.

It now becomes a question whether this non-oxygenation, by which the white corpuscles are rendered large, flaccid, easily collecting masses, is of itself sufficient to produce exudation, or whether, it being the primary cause, and there is no room to spare in the capillaries, there must be some internal secondary action to give the disease.

In infancy, there is always an excess of white corpuscles, imperfect oxygenation enlarges these corpuscles, and any cause that quickens the pulse increases their number. The point in infantile eczema is, whether this increased and enlarged corpuscular matter acts simply locally, or whether, with the local congestion consequent on such increase and enlargement, there is in addition hepatic obstruction. The quantity of fluid poured out in many cases, the rapidity with which it occurs, favours the latter view; whilst the readiness with which external applications relieve these cases tends to the former.

The organ which occupies the greatest space in the earlier stages of life is the liver; and this space is, compared with the body at maturity, immensely disproportionate; any derangement in its functions would therefore lead to consequences much more marked than when the full growth is attained.

Now we see from observation during life, corroborated by examination after death, that if the liver is out of order, exudation very frequently follows; it is therefore only logical to assume that if a baby's liver is in the slightest degree obstructed, an exudation would ensue.

There are sundry difficulties connected with an examination of this viscus; during early life its dimensions in relation to the external boundaries are constantly changing, and these boundaries, which afterwards have a well known limit, are constantly varying, whilst a manual examination elicits no information from the little patient as to tenderness on pressure that an older one can give.

When grown up there is often such a layer of fat that it is most difficult, if not impossible, to make a satisfactory examination, and great hepatic enlargement may be practically intangible at first, only becoming decidedly apparent after several weeks of illness, and wasting of adipose tissue.

But we do not find great enlargement, or in fact enlargement at all, always necessary to produce exudation; it is not simply increased size, but that, when there is such an increase, the circulating power

is less likely to be able to propel the blood through the augmented mass of glandular substance ; if this want of force arises, the dimensions of the liver are immaterial ; in many persons the hepatic venous circulation appears just on the balance, and a glass of ale or a bottle of wine is sufficient to produce scales on the palmar surfaces, or a papular rash on the wrists.

When persons are thus sensitive, they are generally very careful, and are probably safer than those who boast that nothing affects them, and consequently indulge to such an extent that their first illness is their last. Though even these are seldom without their warning eruptions, if the notice is not too late. How common is the expression, “Never had anything of the sort before ;” as though long continued violation of the laws of health was to insure by audacity a never ending immunity. You may also notice, how often the percussive and tactile means of examination are employed. An attendance at public institutions will enable you to judge for yourself, when cases of exudation, Psoriasis Inveterata, eczema in all its varieties, papular, pustular, squamous or vesicular, are to be treated ; how often are the patients requested to strip and lie down, that the state of the liver may be ascertained, though the knowledge that can be derived may be but slight, from the imperfect means of investigation at command.

As regards post mortem appearances, statistics

are remarkably meagre, the few mentioned are not given in detail, and they appear to have followed other diseases which have been the cause of death, and which may have masked any special disorganisation with reference to cutaneous eruptions; those few that are given corroborate the statement that there is nearly always a detectible internal congestion, or obstruction to the circulation of the blood, found after death, when a patient has suffered from chronic exudative disease. There are dropsies in which after death the cause is not to be found, but nobody doubts that there must have been a cause; and if there is chronic exudation of the skin, a successful autopsy as to its cause is more likely to take place, when the investigator believes that a cause is to be found, has some idea of what to look for, and where to find it. For the above reasons it may perhaps be safer to assume that infantile eczema, like Psoriasis Inveterata, is secondary to internal changes; that the most probable viscus involved is the liver; and that the skin in such cases relieves the system by the profuse discharge from its most tender part; for the skin of the face is not only very thin, but if there is any ablutionary process going on, however much the remaining portion of the body may be neglected, the head and face generally get some benefit from soap and water, which slightly facilitates an exudation. These eczematous eruptions in children are generally easily cured, for one very important reason. By the growth of the

child, unless the cause increases in proportion, any internal congestion must be relieved by that growth, and relieved in the best and most natural manner by enlargement of the retaining vessels. You can observe this very well in congestion of the lungs, which in children cures itself. For presuming that growth does not go on in the congested parts, wherever they touch a sound spot, there the tension must always be relieved. Now this cure by growth cannot be even imitated in after life; then we have practically to do with fixed boundaries, and all we can effect is to strengthen the walls if weak, and endeavour to ensure a proper current through them.

Recapitulating before going into further details, you must recollect that the cause of constitutional chronic exudative disorder is imperfect circulation; that the imperfection generally lies in the return current; that the liver is primarily or consequently at fault, though not universally; and that successful treatment depends, 1st, on whether the circulation can possibly be restored to a healthy state; 2nd, on your ability to detect the cause, and prescribe the proper treatment; 3rd, on the capability and willingness of the patient to abide by and follow the directions given. It does not follow that the cause detected shall always be removable, but in nearly all cases where this happens the effects may be greatly mitigated, and if you have a clear perception of what any medicine administered is expected to effectuate, you will be able to judge whether a satis-

factory result is obtainable, and you will avoid a termination that sometimes occurs. A remedy having been fortuitously successful, the practitioner, exhilarated by the unexpected result, endeavouring to give a final polish to the case, renders it worse than it was originally, and so discloses to the patient how entirely the previous amendment was caused by lucky ignorance.

LETTER VI.

Treatment of Eczema continued—Chronic—Incurable—Squamous for specific—Resembling course of hepatic disease—Causes generally — Remedies — Pharmacopœia — Indigestion — Renal congestion—Hepatic—Skin—Purgatives, laxatives — Rest — Tonics — Fresh Air — Foul Air — Exercise — Importance — Neglect — Conditions of Modern Life—Anecdote — Stimulants — Alcoholic—Beer Injurious — Phosphorus — Many remedies, approved, condemned— Arsenical, non-arsenical — Common case.

SIR,

Chronic Eczema from incurable organic disease, whether that disease only occasions mechanical obstruction, secondarily or as part of the malady, is never capable of a permanent cure, and your best efforts will only afford relief more or less temporary.

The disease itself varies in a remarkable manner; at one time nearly gone, at another the whole body studded with scales, discrete, or in groups or tracts; the face becomes swollen and red, weeping freely on the application of a poultice, whilst similar treatment to the extremities in the same condition changes elevated desquamating spots into pustules, at the same time removing all the inflammatory symptoms. Thus, instead of scales, you have

clearly formed, fully distended, perfect pustules; the warmth and moisture of the poultice softening the skin facilitates the elevation of the cuticle, and the same influences cause the formative germs to become pus; on the face the skin is thin and firmly attached, instead therefore of pustules, you have weeping.

The treatment of incurable eczema is the same as that for chronic eczema, from whatever cause that arises, for these exudations all present the same appearances, arising from excess of white corpuscles; and it is only by finding that different remedies only relieve for a time, and that the strictest observation of regular habits and appropriate diet only alleviates the disorder, that you may first begin to suspect that the exudation is dependent on some intangible, incurable cause, that proceeds in its course either slowly or at intervals, and which, at a later period of development and full manifestation, leads to diseases that from their gravity imperil life.

On the other hand a cause, though quite irremovable, may be very evident, and yet not dangerous, causing a patient to pass a long wearying existence, constantly under some treatment, and possibly a prey to every nostrum ignorance or extortion can invent or suggest.

Perhaps the disposition of the exudation is to the squamous form; and in despair, although the general signs of specific disorder are absent, you

administer mercury; just before salivation, or that period, the eruption nearly all disappears,—a not uncommon result in exudation generally,—and you blame your own stupidity, and perhaps some want of confidence in your patient, that this satisfactory result has not been before attained. Alas, in the midst of your own exultation and patient's content, the disease reappears worse than ever, and this time in a purely vesicular and weeping form; you then realise the troubles of endeavouring to cure an incurable disease, and see that it can only be palliated, and that the most careful and regular living is necessary to obtain even the slightest mitigation. If you obtain a post mortem, in many such cases you will wonder not that you failed in curing the exudation, but that so much disease could exist without being sooner fatal.

You may occasionally see a case of hepatic disease in which for several years the patient is quite yellow, with dark brown conjunctivæ, and in which, after the failure of innumerable courses of treatment has almost caused the abandonment of hope, the biliary element has at length disappeared from external exhibition, and the case has become gradually well under some very simple remedy, possibly a “placebo.”

Cases entirely similar to the above, in progress and termination, occur in exudative affections, the cause remaining entirely unknown, and disappearing without any obvious reason or special treatment;

in fact it is only by the fluctuations of the exudation that we know that internal changes are going on ; from this you will see that a decidedly unfavourable opinion must not be too hastily expressed.

The causes you will have generally to treat are indigestion, hepatic congestion, renal congestion, anæmia, uterine derangement, and an inactive skin ; and the remedies you have at command are laxatives, purgatives, diuretics, diaphoretics, antacids, tonics, and stimulants.

Your Pharmacopœia need not be very extensive ; the ordinary drugs are quite sufficient ; the tools are good, if you do not expect too much from them, and know how to handle what you have ; and we will now examine how the various remedies act, and why they are useful as applied to each of the above named causes.

After listening to the history of a case, the usual request to put out the tongue shows that the state of the stomach, which we infer from the lingual surface, is always a primary consideration ; not that deranged digestion can produce exudation except secondarily, but that it is associated with various other morbid conditions, and that its rectification must be either preliminary to, or consonant with, the general treatment, and that we must ensure, as far as possible, that the nutritive processes shall be healthily carried on. It is possible that continued indigestion *per se* may lead to anæmia and consequent exudation ; generally, however, the dyspepsia

is part of a more complicated disturbance. You may have irritability of the stomach, with a bright glassy tongue, or with elevated papillæ surrounded by a white surface; the former is a constant associate with elderly, and the latter with infantile eczems. A white tongue, more or less streaky, and tinged with brown, is found where there is either excessive acidity or diminished gastric secretion. With any stomachic derangement, the first necessity is rest; in health the secretions are acid, in disease generally more acid; this rest is obtained by prussic acid in extreme cases; by potash if a diuretic action is desirable; by soda, which is antacid simply, or by the carbonate of bismuth, which is more powerful and less depressing than the alkalies, but tends to produce constipation.

It is orthodox to suppose that the nitric and hydrochloric acids exercise an astringent effect on the gastric mucous surfaces, and so allay irritation; but to do this, they would require to be given in a much more concentrated state than is ever thought safe, and their action is really diuretic and slightly stimulant.

Renal congestion is seen by the scanty flow of urine, and is met by either slight diuretics if there are no inflammatory symptoms, or by purgatives and diaphoretics.

Hepatic congestion is suspected if you have a foul tongue; loss of appetite for breakfast; the angles of the conjunctivæ tinged yellow; enlargement

detectible by percussion, with or without tenderness; a bitter taste in the mouth, pain under the shoulder blades, sickness, confined, irregular bowels, offensive dark stools, and urine loaded with salts. It is very rarely the case that some of these symptoms are not sufficiently prominent to enable you to diagnose the cause of the exudation. Now for this form, you have diaphoretics, laxatives, diuretics, and purgatives.

An inactive skin, either constitutionally dry, or suddenly checked in action, is relieved by the same remedies, and by warm baths.

Whatever form of exudation exists, there is generally a considerable extent of sound surface, and this surface should be utilised to the utmost for the relief of either affected liver or kidneys; this is accomplished by warmth, exercise, baths, or such a diaphoretic as acetate of ammonia. When the skin is the peccant organ itself, baths will coax it into proper action, and then purgatives and diuretics assist.

A brisk purge by draining the vessels of the intestines causes less blood to be sent into the liver and kidneys, and thus relieves *pro tem.* any congestion in those organs; the blood then circulates with greater rapidity through them, so that whatever purge is used you obtain increased flow of both bile and urine. Mercurials have, in addition, slight special stimulating properties on the liver; you will have, therefore, to avoid them when there is such a ten-

dency to inflammation as to make stimulation undesirable, unless at intervals. You must observe that we are only discussing those modified forms of congestion that are causes of exudation. But you cannot purge for ever; frequent recourse to this mode leads to great irritation of the bowels and to hæmorrhoids.

Laxatives are more admissible, by securing a regular evacuation, unaccompanied by unwished-for evils, and they can be given for a lengthened period. Sulphur is one of the best laxative remedies, either alone or in combination with magnesia, or in the various sulphurous waters which form the medical attractions of numerous fashionable localities. Diuretics can be given also for a long time; they are either alkaline, such as potash; or acid as hydrochloric acid, alone or combined with iron. The former tends to lowering the system, by diminishing the fibrine in the blood; the latter to irritation of the urethra. Neutral salts may act either simply, as their base does, or as either one or other of their compounds predominate; the more deliquescent they are, the greater their diuretic action, which in all cases is assisted by the greater amount of water taken with the medicine; in fact, the action is to a great extent controlled by the quantity of fluid imbibed.

Now you will observe that, in every case, you relieve a suffering organ by rest; you make others do the work, as far as possible, until repose enables the weak part to resume duty.

Even in anæmia, which clearly requires iron in some form, and in all cases in which tonics and stimulants are given, you must take care that the sudden change from the passage of enriched blood, instead of the poor blood previously circulating, does not block up the vessels in the glandular system.

The action of tonics is to increase the force of the circulation, and to improve the quality of the blood circulated; the anæmic form of exudative disease is the only one in which the medicinal tonics are very useful. There is no difficulty in removing other exudations occasionally by them; but with one special exemption, to be afterwards discussed; unless tonics are accompanied by other treatment, their value is small, and in many cases injurious. The best tonics are fresh air, exercise, and good food.

If you should ever arrive at one of our large seaports, from a distance, you will notice a black cloud of smoke hanging over the town, like an extinguisher, and then you will see the atmosphere produced by commercial prosperity, and the consequent association of dense population; once amongst this cloud, its hideousness disappears, but it is still existent. It is probably impossible that large multitudes should live together without some atmospheric deterioration and pollution; but this is made worse by that freedom of trade which permits anyone to follow a pursuit, however deleterious to others, practically unchecked. In this town when everyone is supposed to be asleep, in some districts there is

always a free discharge of sulphuretted hydrogen and acid gas, imperceptible in the more elevated spots, except on a very calm night, when the absence of current allows the poisonous vapour to collect and rise. The small fines, and weak supervision exercised to restrict excessive smoke, have a result seen daily at one o'clock, in the clouds of soot poured over and amongst dwelling-houses. The most impure air is generally breathed by the lower classes, where it acts rapidly, combined with absence of meat in their diet. In every case, pure air must be adjuvant to the cure of infantile eczema, and equally important remedies are good food, warm clothing, and dry, well-drained habitations.

Exercise is another primary consideration that requires notice, especially in reference to the ordinary conditions of civilised society.

It was originally ordained that man should live by the sweat of his brow; and ever since this law was promulgated, man's whole efforts have been to live without sweating. From the time of adolescence, no active exertion by which the pores are opened, the circulation quickened, and the heart's action assisted, is commonly practised; and if any celebrity prefers cutting down a tree to a pill and draught, it is looked upon as the eccentricity of genius, and it is certainly a loss to the profession. Some have neither the desire nor the opportunity to indulge in shooting, archery, golf, cricket, etc.; but there are many other ways in which an equal amount

of good could be obtained, if such way is of a more simple and uninteresting nature. An hour's daily exercise at a mangle would be quite sufficient to reduce the number of diseases of an asthenic character, in which the first word of the attendant is "support." And such exercise ought to be taken when the patient is well, and then he might not have the pleasure of seeing his attendant so often, nor so continuously.

There will always be numerous cases which hard work, strong daily manual labour, do not exempt from disease; but such cases in the male sex are rare compared to those in women, who get tired without exercise—a remark that applies equally to those who pass an office life. But if the mischief, gradually accumulating for years, at length shows itself, how gingerly some practitioners handle their patients' weakness; how the toddy or night-cap is allowed, "just one glass," and that at a time when all stimulus must be bad, for the body is going to rest.

There is an anecdote of a nobleman in this country who preferred the gout to some peculiar sherry; now, many men like the sherry and the gout. It is the constant complaint of patients with exudative disease that they feel very weak, as though they could possibly feel otherwise; they have been living for years at half-boiler power, expecting the heart to do all the work, heavily weighting it with obstacles to overcome, in every shape, and depriving

that organ of the little natural assistance they can give it. You may read that, in a steamer's trial, the half-boiler power means a greatly diminished consumption of fuel; but human beings, when working with the smallest pressure of steam, eat as much or more food, and imbibe as many stimulants, as would be required to keep them going forty miles a day.

Examine, as we have done before, the direct results of such lives, an excess of nutrient matter is poured into the system, out of all proportion to the amount utilised or consumed; a certain proportion is laid by as fat; but, the excess still continuing, the only resource the system has is to decline to oxidate such matter, and this it does by decreasing the heart's action, and as muscles not used soon become flaccid, the heart becomes flabby. The blood possibly contains an excess of red granular matter in this case; as increase of white corpuscles means decrease of red granules, you have an inducement to such increase; but, in any case, lowering the pulse entails this increase; you then have exudation as a proper consequence. But this is not all; the increase of white corpuscles delayed in the liver has caused that viscus to enlarge; there are then two conditions existing, either of which is sufficient alone to produce cutaneous exudation.

We now come to the consideration of stimulants, which really resolves itself into the examination of the ordinary liquids in use of an intoxicating nature.

It is pretty well admitted now, that for any extra or long continued exertion, the use of alcoholic stimulants is not only unnecessary, but absolutely injurious, from the evanescent and temporary character of the force they elicit, and from the reaction that necessarily follows, though during the existence of the increased force they are really tonics. But these stimulants have also another property, which is to cause the red granules to become agglomerated; and this is the special result in exudative diseases that requires removal. Beer is an especial favourite with many, and though it is perhaps going too far to say that it is deleterious to a man who earns his livelihood by hard manual labour, yet it is entirely unnecessary, if agreeable; all the experiments in the beer interest which have taken place to prove that it replaces animal food, or that it renders a less quantity necessary for the same amount of strength, are fallacious in principle, limited in extent, and erroneous in conclusions.

Whatever justification or excuse can be made for the use of stimulants, either habitually or medicinally, in health or disease generally, in exudative affections their effect is equal to a slow poison. The system is already overloaded, and to stimulate the appetite to increased activity when already more is taken than can be profitably disposed of by the system, is like assisting, with a push, a man who stumbles going down hill—you accelerate his progress, but also his downfall. You need not class

such fluids as “gladstone” claret with stimulants, they are merely water spoiled; and many of those drinks whose principal recommendation is that they are “unadulterated,” when any adulteration would be an improvement, come in the same category.

We have now gone over the principal means of relief of exudation, with one exception, and that a most important one, the use of arsenic. Before proceeding to this metal, which requires a letter for itself, you may notice that for the relief of exudation, especially of that form that is called Psoriasis, a vast number of remedies have been recommended at various times, and that all such remedies have been at different times condemned; all *saline* purgatives; all the vegetable cathartics; all the mineral acids, cantharides, and all diuretics, with everything used as stimulants generally, or with any special action on the excretory glands. They have each and all been in turn tried, praised, and condemned; and cutaneous treatment has resolved itself into two great divisions, arsenical and non-arsenical. The non-arsenical is confined to some remedies already recommended, and the reason of their uncertainty of action is that no clear view of what they will and ought to do is entertained. With a languid circulation, a stimulant giving temporary force possibly overcomes any obstruction; purgatives, diuretics, and diaphoretics act as we have before seen. You may therefore believe that every drug recommended has some good quality,

and that the benefit to be derived from it is in exact proportion as it acts in one of the above manners.

Take a case, of which you may see hundreds in any public institution; a woman comes in with some scaly eruption, she has taken a purge, and the tongue is clean and bowels open. Arsenic says, "Here is a case that arsenic will relieve." Non-arsenic, "This case arsenic will not cure;" both are probably right, and with each a chorus of sympathising and intelligent students cordially agree. A dermatologist who has no prejudices may look upon it in a despairing manner, as a special dispensation of Providence to perplex a practitioner. Non-arsenic tries the whole pharmacopœia, and, as he occasionally hits some blot, so the woman gets better, to relapse again; arsenic relieves the external signs, and just as the case ought to be discharged cured, the disease appears worse than ever. And yet the matter is as simple as possible; look at her as she stands, feel the weak pulse, hear her say that she takes a little beer, she can't eat without it; you have before you a perfect specimen of obstructed circulation, with white corpuscles in great excess, the veins are loaded with fat, the liver is enlarged, the catamenia irregular or wanting, the veins of the leg varicose, possibly hæmorrhoids, the heart's action weak, feet probably swelling at night. The only cure for such a case is starvation and exercise; with these two many medicines will assist, without

them all medicines are vain ; but even then, to return to the same life as has been lived before is sure to cause a recurrence of the disease.

It does not follow that hard labour, or that any method of living, will prevent any given exudation ; but the state which produces this, is that state induced by over-eating, over-drinking, and sedentary habits.

In a recent case, a person consulted a tolerably well known metropolitan dermatologist for a palmar psoriasis ; he was told, “ he must take arsenic, and he might take beer ; ” the provincial opinion was, that “ he must not take beer, and he might take arsenic.” It is evident that these two opinions were formed on entirely opposite grounds, and that one must have been quite wanting in appreciation of the case ; the patient took neither beer nor arsenic and got well.

The next letter will commence the consideration of Arsenic, its action and administration.

LETTER VII.

Arsenic — Action—On the Circulation generally—Glandular—Corpuscles—Cumulative—Result of Action—Hydrodynamical—Excessive Action — General Power — Definition — Utility — In Anæmic Eczema — Acute Eczema — Chronic Eczema — Preliminary Treatment — Facility of Administration — Cases generally — Case — Separation of Dermatology from General Medicine — Disadvantages of Arsenic — Irritation of Stomach — Mercury in Eczema — Comparison with Arsenic—Mode of giving Arsenic—Length of Course — In Children — Forms of Arsenic — Precautions necessary — Dose — Combinations — Universality — Secret Prescriptions—Diagnosis of Exudation—Pruritus from Specific Disease—Complications — General Medicines in Exudation — External Applications.

SIR,

Arsenic is a metallic poison, which has no affinity with any structures of the body, and which when introduced into the system is only removed by the ordinary processes of elimination.

We have to consider its action, advantages, disadvantages, modes of administration, and rules that govern the latter, with results to be obtained.

Arsenic, taken into the system, is eminently hostile to life, and is quickly eliminated. In effecting this elimination, and as a consequence of the irritation produced by its presence, the blood is

circulated more rapidly; consequently, as a first result, we have increased circulation artificially established. All glandular organs are stirred up, all mucous surfaces are stimulated, and the wheels of the human machine are practically greased and made to run easier without extra call on the primary power.

As secreting glands and surfaces depend for their activity on the quantity of blood circulated through them, they all secrete more freely, and the excretory organs throw off (1) their normal quantity, (2) the arsenic, (3) the extra quantity made up of their peculiar secretion and water. We thus obtain a diminished quantity of fluid circulated, if this is an appreciable item.

The increased force of circulation caused by arsenic also produces diminution of the number of white corpuscles, and decrease of their size, increase of the number of red granules, which become smaller and firmer, and display unwillingness to coalesce.

As the presence of arsenic is never quietly tolerated, it becomes more hostile as the quantity given is increased. Its action therefore is accumulative, that is, that if the quantity given (in a stated time) is greater than the quantity thrown out of the system, by continuing the same dose in that time the poisonous effects of the medicine will sooner or later be manifested.

The consequences of arsenical action are, that

the blood is by it rendered denser and more quickly circulated; the formative germs, or white corpuscles, are reduced in number. Therefore, by the laws of endosmosis the healthy capillaries absorb any exuded fluid, and any congested capillaries have not only a power of suction exercised upon them by hydrodynamical laws, but also the propelling power is increased, so that, under these two influences, any stagnant or congested spot is quickly restored to its normal condition.

As these changes proceed to excess, the circulation, increased in force and consistency, becomes too rapid for the capillaries to transmit; the white corpuscles increase in number. We have evidence of this fact in a dry cough, from congestion of the bronchial surfaces, conjunctivitis, and finally general cutaneous inflammation, Pityriasis arsenicalis, followed by slight desquamation—an artificial exanthem.

A consideration of the above phenomena shows you what an immense power we possess. The appetite and digestion improve, the bowels become regular, the liver and kidneys act freely, and yet there is no such special glandular determination as should render arsenical administration incompatible with weakness of any of the organs necessary to existence.

Now, for our knowledge of the facilities with which arsenic may be given, for our confidence in its safety; utility, and subordination, we are

indebted to Hunt; but even Hunt has underestimated its powers, if not their universality.

You will see that arsenic is a stimulant, a tonic, and a liquefacient, and that there is no spanæmic action.

It greatly hastens the cure of all anæmic eczems, and it removes, if only temporarily, all forms of vesicular, papular, and squamous exudation.

It is not advisable to use it in acute eruptions, for it quickens the pulse; nor in most chronic bullous affections, for in these the obstruction to the circulation is greater than any medicine simply quickening the pulse can overcome.

It is especially useful in all chronic exudations, with the above exceptions, and should be tried in all cases in which the cause is a mystery, and you are obliged to endeavour to remove the effect.

When you give arsenic as a preliminary all temporary derangements are to be put right first, if possible; and during the arsenical course, rigid observation of temperate and regular diet and habits must be insisted upon. It is probable that an immense number of cases would be cured without any medicine under these observances, for which arsenic gets the credit; on the other hand, it may remove a disease, and the amelioration may continue for some years, in spite of the patient's returning to evil ways. For whilst arsenic can remove no organic enlargement, it can prevent that enlargement being torpid, and the torpidity may take some time to be

re-established. There are cases in which, for obtaining a livelihood, a person requires a facial eruption to be removed ; for manual labour a palmar, or for exercise a plantar exfoliation ; in these events, although you may clearly see that arsenic is not a *cure*, you must avail yourself of its services.

It is true that the facility with which arsenic is given, its action regulated, and the mastery it has over all exudations, gives rise to the great temptation of always prescribing it, though you know that simpler remedies, with perfect obedience, would produce a more permanent, and therefore a better result. Sometimes the rapidity of the cure justifies you in a patient's sight ; but if arsenic fails, it is humiliating to have to resort to other means afterwards.

An eminent authority declared, during the course of a late celebrated trial, that photographic portraits could be so altered by varying the light as to take any desired feature. In general, cases are very like these portraits, and consequently you will not find many quoted in these letters ; but in one case, where the liver was twice the ordinary size with valvular cardiac disease, a universal chronic vesicular, papular, and squamous exudation was entirely removed by arsenic, although the urine, loaded with purpures, was not entirely cleared. Six months after the cutaneous symptoms had been removed, a febrile attack, accompanied by œdema of the extremities, carried off the patient ; but there was no return of

the exudative disease externally, the system relieved itself in the subcutaneous tissue, and that state necessary to produce the eczema did not arise. This case is mentioned, not only as showing the immense power of arsenic, but also to exemplify the evils of separating diseases of the skin from general medicine, by which separation they have hitherto been unconnected with post-mortem appearances. A person consults some eminent authority, who sees his actual state, and may, perhaps, ascertain his past history; time passes on, and fatal illness attacks the patient; a general practitioner attends; the case is possibly clear enough, so a post-mortem, if made, has only reference to the last attack, the transition stage of cutaneous disease is entirely neglected, and a profitable lesson lost.

The disadvantages of arsenic are very limited. You may meet with cases in which it salivates, produces sickness, causes irritation of the stomach, or is so hostile as to entirely preclude its administration; but such cases as the latter are very rare, and the gastric derangement can generally be avoided by care in its administration. Hunt asserts—and any of his dicta are valuable—that arsenic is the remedy for non-specific, and mercury for specific exudation. We shall have to examine the reason why arsenic does not suit syphilis later on; at present, we will consider why mercury does not cure non-specific exudations, for Hunt's opinion, though not absolutely, is practically correct.

Exudative disease requiring one or other of these remedies, in which the special power is wanted apart from such effects as purgation, is essentially chronic. It is not the result of sudden change, and cannot be relieved by sudden action. Now mercury soon loses its effects ; and though salivation occasionally relieves exudation by a stimulating process exactly similar to that of arsenic, yet you cannot continue to produce salivation without evils arising worse than the disease ; and when that stage has arrived, such continuation produces no further amelioration, but the contrary. Mercurial beneficial effects are therefore transitory, and not equal to the secondary mischief. The difference between the action of the two metals is like that between electricity and galvanism, and the continued force of the latter is what we require in exudative disorders.

If you have once resolved on giving arsenic, you must not allow the course to be interrupted for slight reasons ; if every little complication or untoward event is to cause an interval, you had better never have begun to give it at all. You need never increase the dose, but wait patiently for the full effects to be produced, which you can ascertain by examination of the inner surfaces of the eyelids. If they are congested and swollen, if there is lachrymation, if there is a sensation of sand in the eye, you diminish the dose, and so can keep the action going on for years, if necessary ; sometimes, by gradual reduction, the smallest quantity is sufficient

for this purpose, the dose depending on the varying rapidity with which the metal is eliminated. Children bear its action very well; above five years of age you may begin with the full dose, below that age with a half dose.

The form in which arsenic is usually given is that solution of arsenious acid and potash, called liquor potassæ arsenitis, liquor arsenicalis, or Fowler's solution. There was another preparation, the liquor arsenici chloridi, only a third as strong as the alkaline form; but in the new Pharmacopœia, this acid compound has been introduced as the liquor arsenici hydrochlorici, and rendered equal in strength to Fowler's solution. There is also an alkaline preparation in which the base is soda; and arsenious acid may be given in powder chemically uncombined. You ought always to give arsenic in solution during a meal, or immediately after food; by so doing, all risk of imperfect pulverisation or admixture is avoided, and the drug is presented to the system in a form and at a time when its absorption into the system is effected most easily, and with the least chance of causing local irritation, which might occur if taken into an empty stomach. The administration by the mouth is so easy that it is not necessary to discuss any hypodermic methods.

There is very little to choose between any of the soluble forms or preparations, the quantity of acid or alkali present is so small as to be entirely immaterial, and the tincture of lavender in Fowler's

solution is practically tasteless ; but if the time of administration is of long duration, a change from one form to another is sometimes useful if the effect appears stationary, an event that may depend on some carelessness in dispensing.

The dose is five minims of the liquor arsenicalis three times a day with the food, and it is to be continued until the disease is removed, or the conjunctivæ become inflamed ; both events may arrive simultaneously ; you then diminish the dose to one-half, and by increasing or still further diluting you keep the patient just below the point at which the ocular disturbance arises.

You may combine the arsenic with compound spirits of ammonia if there is gastric irritation, or with iron for anæmic eczems, and you must see that the bowels are open regularly, though generally the drug effects this itself ; and if you never give an over-dose, you will never stop the course. With the above precautions, arsenic may be given for an indefinite period, and in exactly the same way, for all other diseases besides the exudative in which it is recommended.

Some persons have a horror of arsenic, their impression and acquaintance with its effects being founded on descriptions of cases of slow poisoning in works of fiction, in which impossible symptoms are described in a manner very creditable to the imagination of the authors, and every obvious result entirely ignored. It is unfortunate for the credi-

bility of events, which ought to form a possible item in novels, that their authors should select a medicine of such determinate action as arsenic, when the range of choice is so extensive.

You had better always inform your patient that he is taking arsenic; by so doing you generally obtain more strict and willing obedience to general orders. The suggestion once published, that by some secret understanding with the dispenser the patient should be kept in ignorance that this medicine was prescribed, it is gratifying to find has never found a seconder; if you cannot inspire sufficient confidence to induce a patient to take whatever you think best, he had better consult some one else, and then you will avoid the degradation of yourself and profession which a secret compact with the druggist implies.

The chief point in the diagnosis of exudative disorders is to distinguish the non-specific from those forms which arise from a specific virus; and the only difficulty of so doing is in some rare cases of psoriasis palmaris, where the thick skin prevents the distinction being very evident, and in these you must determine a doubtful opinion by collateral symptoms and history.

In eczema, the pruritus is a more determinate symptom than in syphilis, and you have vesicles which never arise in syphilis; non-specific papules and scales are free from the brown copper tinge of the specific forms; there are no real bullæ in

specific eruptions which are caused essentially by the stagnation of the blood and destruction of its vitality; thus in these the complete separation between the serous fluid and red granules no longer exists, the latter being mixed with the fluid, whereas in non-specific eruptions, even where large bullæ are raised by the exudation of poor blood, this effect of an animal poison germ is never seen.

As there is nothing in syphilis to protect a case from simple exudation, so you may have the two forms concurrent, especially when the syphilitic poison is feeble, and the causes of the eczema slight and passive. But in these complications the specific taint is easily seen in some locality; when of greater virulence the eczem is magnified or multiplied by the poison; for instance, if you have syphilis added to that state which would produce pemphigus, the result is not a compound bleb of both, but ulceration. In these cases the disease of greater severity requires the principal treatment, though as the specific result can be sooner amended, it generally demands primary attention; fortunately the remedies of either do not militate against each other if they do no good.

It is not necessary to go much into details as to the various remedies required for exudation, it is enough to point out that acetate of ammonia is the most useful diaphoretic; sulphur, aloes, senna and salts the best laxatives and purgatives; the carbonate, citrate, and acetate of potash the most

available diuretics, or tincture of iron, if in addition a chalybeate is wanted ; tartrate or citrate of iron and potash, if the mineral acid in the tincture is too irritating to the bladder. Iron with arsenic, or quinine, in anæmic eczems, with carbonate of ammonia for these forms when complicated with hysteria, are obviously the remedies.

For external applications in exudative diseases, there is the zinc ointment, with which may be combined laudanum, oil of cade, tannate of glycerine, or carbolic acid, accordingly as a sedative, anti-pruritic, astringent or antiseptic action is required. Storax ointment is agreeable and soothing. Citrine ointment, or weak nitric acid lotion, stimulate ; glycerine, if the parts are to be kept softened, or the increased sebaceous secretion rendered more fluid ; and with the glycerine, oil of almonds and acetate of lead may be joined if there is much inflammation, whilst the latter salt or sulphate of zinc are available astringents in the form of lotions mixed with emulsion of almonds as an agreeable vehicle. Tannin, either in some of the vegetable tinctures, or alone in solution, is a powerful astringent ; and as an anti-pruritic hydrocyanic acid or its compounds is often useful. Iodoform and the hydrate of chloral come under the same class of external sedatives ; the first in an ointment, the latter in a lotion. The stavesacre ointment destroys lice without any risk or irritation, and is valuable in infantile eczems. Calamine, starch, or lycopodium, all in the finest

powder, may be the only external applications tolerated in the irritable forms of anæmic eczema; and, with the aid of spirits, camphor may be mixed with them if desirable, as when there is a suspicion of pediculi; or morphia, if it can be tolerated and it is thought desirable. The various alkaline solutions, such as potash, soda, or lime, with spirits, or spirits and water, by which the thickened scales of psoriasis can be removed, have been recommended, but their use can only be justified if it is considered that the cause of the eruption is thought to be intermittent, and therefore you are anxious to ascertain that the persistence of local disease does not mask the periods of eruption. As a general rule, water and alkalies, alone or combined, are the worst possible applications, though a poultice may be necessary if the inflammation is diffused and acute.

We have now discussed Eczema generally, and its treatment; there remain some forms that from their prevalence or peculiarity require more special notice, though the principles of treatment are really the same, as the causes which occasion them arise in the same manner.

LETTER VIII.

Treatment of Exudative Disease continued — Psoriasis — Pityriasis — Acute — Chronic — Eczema Oculi — Uterine — Case — Acute Pemphigus — Chronic — Pompholyx — Hebra's Treatment — Liability to permanent marks — Eczema Pudendi — Uterine — Tumours — Hepatic — Eczema Ani — Erythema Laeve — Nodosum — Circinatum — Pernio — Description — Treatment — Ecthyma — Description — Treatment — Conclusion.

SIR,

The treatment of Psoriasis in all forms is usually arsenical, but as this metal only acts on the principles before given, the result is not uniformly satisfactory. That very many cases have the scaly formation removed by it is very true; and that some cases, by its influence and carefulness of diet and habits afterwards, are free from any return, at all events for many years, is also certain; but as the metallic action is only a liquefacient to the extent we have already noticed, its failure is frequent, and then the non-arsenical treatment has to be followed. Acute Pityriasis in all forms is seen with great functional disturbance, and requires alkalies and purgatives, with any external soothing applications. Chronic Pityriasis is inseparable from ordinary scaly eczema.

Eczema round the eyelids yields locally to the iodoform ointment, and that on the nose to tannin lotions, the internal treatment being adapted to the special cause of the eruption.

When a papular eruption is associated with uterine disturbance, camphor, valerian, henbane or belladonna are useful; accompanied by indigestion, it requires purging, with bismuth or stomachic sedatives. You must always endeavour to make out if the uterine state is the primary cause, or, as is more frequently the case, only a part or a consequence of other derangement. In one very bad case of eczema of the plantar and palmar surfaces, where there was great irritation inside the os, with the assistance of Dr. Fenton, whose well known skill in uterine affections is only equalled by the kindness with which it is placed at the disposal of his friends, caustic was applied freely to the inner surface, with the very best results; the catamenia came freely, and the eczem disappeared.

Acute Pemphigus requires purgatives and diaphoretics; the bowels and stomach are in fault as well as the skin; chronic pemphigus in the adult may, in addition to or instead of the above, do better with diuretics; they both indicate hepatic congestion as a main cause, and it is the only one in the infantile disease. In children, milk and eggs for the principal articles of diet, as much fresh air as can be given, or taken, if the patient is old enough to run about; no sweets or sugar, a

mercurial powder at night, followed by some preparation of senna in the morning two or three times a week, with slight diuretics, for the medical treatment; and a warm bath every night if the kidneys are not acting; the urine in these cases being often very thick and scanty. This treatment, steadily pursued, will in time assist the cure, the first evidence of which is the disappearance of the diffused redness round the bullæ. You must not be surprised if you have considerable jaundice during the progress of the case, and for some time after when the patient is nearly or entirely free from bullæ, it will merely confirm you in the treatment. You may occasionally be consulted for Pompholyx; but if the solitary bleb is not of large size, you may only hear of it accidentally, as a small blister that has come on some part of the child's body. Such a warning must not be neglected, and, if attended to properly, that may be the only evidence of hepatic disorder manifested. The usual zinc ointment, with oil of cade, is as good a local application to the sores of pemphigus as you can use; if the flexures of the joints are much inflamed, a weak zinc lotion may be required in addition. Hebra put a patient with pemphigus into a bath for a hundred days and nights, and nine months afterwards for a hundred and nine days, by which he cured his patient. It is not stated if he was considered cured at the end of the first immersion, nor if he ever returned for a third soaking. It would probably be equally cor-

rect, if not equally scientific, if Hebra had stated that the man got well; but nobody but the patient can object if the practitioner is content to claim such a case as a cure; to an impartial reader it has quite a mediæval tone. It might be an interesting subject for enquiry, what the result would have been if the patient had been kept on water, instead of in water, for the length of time given.

In all cases of skin affections, the liability to a permanent mark depends on whether the true skin is affected beyond the power of recovery by resolution; and the danger of a scar is greatly increased by dirt or neglect. Thus, any inflammation of sufficiently long duration leaves indelible traces, and the thinner the skin the less time is required to produce them.

In the Eczema Pudendi of pregnancy, all antipruriginous and astringent applications fail in turn, and this disease will afford ample scope for your inventive faculties in this direction. Each remedy may possibly give some slight temporary relief, but they require constant changing. The diet should be very unstimulating, the skin must be kept acting and the kidneys also. When the eczema is hepatic, as in elderly ladies, relief can be given by purgatives, or bleeding. The eczem in these cases is more chronic, and not so active as in that caused by pregnancy, and outward applications are more successful.

When the cause is hypertrophy of the uterus, or

a tumour, the case is more troublesome than either of the above forms, for you may have then the activity of pregnancy, and the duration of hepatic obstruction. For the cure of the hepatic form, as distinguished from its relief, starvation and strong exercise are essential, with warmth of surface, and treatment generally on the principles before stated. Eczema Ani requires externally oxide of zinc ointment and oil of cade. It is generally associated with piles, and with their removal may possibly cease. If hepatic, the treatment is the same as for the Eczema Pudendi. When the piles and the eczema are both secondary to the hepatic derangement, the relief obtained by removal of the former is only temporary, unless the main cause is amended.

Eczema Læve, in old persons, or accompanying varicose veins, is not a favourable subject for treatment, absolutely incurable, unless the veins are tied. Without mechanical relief you can do nothing for this affection,

Erythema Nodosum is always accompanied by slight febrile symptoms, and is treated by diaphoretics and diuretics. The statement that the elevation contains a clot of blood is not corroborated by its duration of two or three weeks, for a stain would scarcely disappear in that time, much less a clot of blood.

Erythema Linguae, in which the tongue is swollen; and those slight colourless vesicles which

arise on the fingers, are both signs of slight hepatic disorder, and are common in gouty subjects, where this viscus is always more or less deranged.

Erythema Circinatum is only a slowly changing eczem, the congestion being deep, and exfoliating very gradually.

There is another exudative disease, which would no doubt be a subject of arsenical treatment if it were of a more persistent character, and that is Pernio, or Chilblain. In many persons this is an annual and very troublesome complaint. Its appearance, as a red spot, slightly swollen, may be familiar to you from experience; also the itching that all the scratching does not relieve. The redness may remain for an indefinite time, or, instead of proceeding to resolution, the gorged capillaries discharge some fluid which raises the cuticle, in the form of a blister, and in extreme cases ulceration or sloughing may follow, leaving a permanent scar.

The cause of all this is cold and languid circulation, and children are most frequently the sufferers. If the inflamed spot be on a joint or prominent part, the pressure of a boot, or similar cause, may produce a considerable amount of secondary inflammation. In this country, the hands, feet, and ears are the parts attacked; in colder climates, the nose participates in the risk. Though in women who take little exercise, whose spare attenuated form betokens a scanty supply of

animal food, who suffer from cold extremities all the year round, and chilblains as soon as the cold sets in, you see the end of the nose of a red congested hue, which is a near approach to Pernio, locally modified, and exempt from the variations attached to the extremities.

The treatment of Pernio is clearly to increase the powers of circulation in the affected parts, which is done by keeping them warm, and by cod liver oil, quinine, good food, and a sufficiency of it; stimulating embrocations, such as liquor ammoniæ, camphor liniment, turpentine, cantharides, with or without opium, may be used with advantage. Everything that restricts the circulation should be avoided; garters should be tied above the knee, strong elastic boots discarded, exercise taken regularly, and ladies may find much benefit from warm underclothing and eider-down skirts. Boys who are perpetually getting their hands dirty, which require constant washing, should be directed to dry them thoroughly, and restore the circulation by exercise directly. There is another form of exudation not very different from pernio, in which the cause is debility, and the tendency is to form pus; it is called Ecthyma, which begins as a red spot, with a hard circumscribed base; the patient probably considers it a boil, but, instead of the activity of the latter, the inflammation is passive, and the effect is to raise the cuticle into an imperfect bleb, which is partially distended with fluid that rapidly becomes

purulent. When this cuticle comes away you find either a small deep ulcer, surrounded by a slightly ulcerating surface, or a uniform ulceration alone. The skin is inflamed and implicated through its whole depth, and the result is a sunken permanent mark. Ecthyma appears generally on the extremities, the lower limbs by preference ; it is unaccompanied by any constitutional signs as a matter of necessity, and attacks the wealthy as well as the poor. In the former case the patient runs some danger of being salivated, as the practitioner, not contemplating the possibility of ecthyma reaching the affluent, attributes the disorder to specific disease. And yet it is not at all uncommon in young men whose circulation is languid, at the time of puberty. As generally seen at public institutions, the appearance of the adults or children leaves no doubt as to its cause being poverty ; whilst the discharge has not the tendency to form crusts or scales as the specific disease that approaches nearest to ecthyma is inclined to do, nor do ecthematous sores present the sharp cut edges of venereal ulcers. The treatment is good food, good air, stimulants, tonics, and anything or everything else you can think of to increase the vitality of your patient. Cod-liver oil in the poorer class is equivalent to food, and babies and children thrive on it. You will notice that both *pernio* and *ecthyma* are only varieties of *eczema*, considering that word to represent exudation of a non-specific character generally, the former being

the equivalent of eczema solare, and ecthyma that of impetigo or pustular eczema. There does not appear to be much more required on the subject of exudation. You will have to find the cause out for yourself; when that is done, you must have sufficient confidence in your diagnosis to persist, in spite of untoward appearances, in the line of treatment you have resolved upon. Don't rush unnecessarily into arsenic; but if you do, you can accept Hunt's dictum as a guide to the duration of the course, "that it should be continued as many months after the disease has disappeared, as it has existed years." And lastly, at every opportunity, obtain a post-mortem examination where there has been chronic cutaneous exudation.

You will notice that there is nothing contained in the foregoing observations that is not consistent with the first and simplest principles of medicine. Properly considered, an exudation appearing ought to be a source of satisfaction, instead of a cause of perplexity, for it should elucidate a difficult, determine a doubtful, and confirm a correct diagnosis.

LETTER VIII.

Herpes — Definition — Description — Zoster — Hunt — Neurotic — Erratic — Hebra — Varieties of Herpes Zoster — Diagnosis, Vesicles, Changes, Irregularities — Herpes Labialis — Capitis — Preputialis — Neuralgia — Herpes Iris — Circinatus — Diagnosis — Treatment of Herpes — Urticaria — Description — Symptoms — Varieties — Evanida — Perstans — Uterine, Causes — Treatment.

Purpura — Symptoms — Causes — Lichen Lividus — Purpura Pemphigoides — Simplex — Stigmata — Petechiæ — Ecchymosis — Hæmorrhagica — Furuncular Affections — Furunculus — Definition — Locality — Varieties — Causes — Treatment — Anthrax — Definition — Treatment — Hordeolum — Treatment.

SIR,

The next disease to which your attention must be directed is one that has no features in common with those hitherto mentioned, except the fact that it is a non-contagious exudation.

The name of Herpes is given to a non-contagious acute ephemeral eruption of vesicles more or less confluent, generally discrete, always arising from an inflamed base, having definite stages, and disappearing without any traces after a few weeks. You will observe that, whereas in the previous exudative cases the actual appearances presented at the time of inspection is sufficient for diagnosis, we here

have a fresh element—the transient character—of importance as a guide. Not that you are likely ever to mistake herpes for any other affection when once you have seen and recognised it, but it may arise when an eczema is in full force, and then you must be prepared to distinguish between the two exudations, for a time co-existent.

The ephemeral character of the eruption also produces other consequences, in the milder and most frequent forms the annoyance is so trivial that medical aid is not thought of; in a little worse cases, all practitioners consulted are conversant with the appearances and requisite treatment, and it is only in the more severe and rarer forms that they come before those who devote special attention to the treatment of cutaneous diseases.

It is possible that, from the above reasons, the statement that Herpes Zoster occurs only once in a patient's lifetime has originated. A patient once treated notices the simplicity of the affair, and does not consider it necessary to have advice on any subsequent eruption, but follows himself the directions before received. Those authors—Hunt in particular—who consider Herpes Zoster as partaking of the nature of an exanthematous disorder, are at least consistent in their opinion that it generally attacks a patient but once; but others, who attribute the eruption to cerebro-spinal irritation, entirely fail to give any cause which could act on that system once, and once only.

Herpes has been described as a neurotic disease, and the nerves have been brought forward in an overwhelming manner; every patch of eruption has been attributed to a certain distribution of nerves, and these have been mentioned as the actual originators of the disease, as though you said the telegraphic wires sent messages ignoring the existence of a terminal battery. Pain, or itching which is the mildest form of pain, frequently precedes any visible manifestation of disease, and simply denotes that changes are going on involving the nerves before the affection is sufficiently advanced, if it ever advances, to display outwardly its character; and this takes place not only in Herpes, but in specific eruptions; and the erratic character of that pain in Herpes shows that, whilst in some cases we can clearly trace the cause and effect, in others it is so trivial that it is unnoticed, or that the nervous entanglement is either accidental or beyond our comprehension.

The cause of Herpes is irritation, either internal or external, the latter being determinable, and the former possibly so, but generally obscure. You may have Herpes accompanying general fever of various types, or acute inflammations, in which the general constitutional disturbance is sufficient to account for any amount of cutaneous eruption; but in these cases the major trouble renders the cutaneous complication unimportant.

We know that external irritation produces Her-

pes, and yet, when we see that such occurrences as diseased bone or a carious tooth are given as origins of the disease, the use of external applications for the relief of the consequences of the primary mischief is altogether ignored; and when Herpes follows the passing of a catheter, it is attributed to nervous, not mechanical influences.

Hebra gives five different headings, of facts from which his conclusions are drawn about this disease; of these five, two are absolutely incorrect, and one is worthless.

Herpes has been divided into two main varieties, Herpes Zoster and Herpes Phlyctenodes; and the latter separated into many subdivisions, the locality or appearance being taken as characteristic. Except that Zoster is the more severe form, there does not appear any reason why these divisions should exist. Taken broadly, the vesicles of Herpes may be said to be larger than those of eczema, smaller than the bullæ of pemphigus; but we have seen these latter may be only vesicles, whilst the vesicles of Herpes may be confluent, and of considerable extent; but whatever their size, they are always on an inflamed base, and the consecutive scabs, after becoming yellow, change to a dark, almost black hue, the eruption being at the same time definite in form.

The irritation that causes Herpes, produces, first, a congestion, then inflammation of the deeper capillaries of the skin; and this is followed by infiltration, exudation raising the epidermis, and

subsequent exfoliation. These processes being preceded, accompanied, and followed by pain in a varying degree, which pain may be confined to the locality of the eruption, or may extend to very remote parts; pain may be entirely wanting, may only be an antecedent or an accompaniment to the eruption, or may arise when the height of the eruption has passed, and continue for some time afterwards. The vesicles are filled at first with a clear limpid fluid, which scarcely fully distends them; this fluid soon becomes partially dissipated, changing to a milky and opaque colour during this process, giving the vesicles, when closely packed, a pearly opalescent hue, very characteristic of the disease; they now change to an opaque yellow, and finally become dark scabs more or less agglomerated. The vesicles have not a uniform circular base, they have a great tendency to oval shapes, and form such pyriform blebs as a confluence of several oval or hemispherical bullæ would produce.

Herpes Zoster, called also Ignis Sacer and St. Anthony's fire, appears round the waist, in a band of varying breadth, running in successive crops of vesicles from behind forwards, and generally stopping, if not previously arrested, at the median line; and to this form the term Zoster ought to be confined as denoting a girdle, the common name for it being Shingles. It may also appear in irregular clusters on the back or chest, the vesicles varying in size from a pea to a walnut. If it has lasted

some time, the successive crops of vesicles of which the girdle is formed will present the appearances between the old and new vesicles above described. It is usually accompanied by some slight febrile disturbance, and perhaps some other functional derangement easily rectified. The name of St. Anthony's fire is attributable to the pain, sometimes simulating pleurisy, which is occasionally found with Zoster; but whilst a strong man may bitterly complain of its acuteness during its existence, and of consecutive neuralgia afterwards, the eruption of itself being of the most limited extent, a child five years old, in which the whole of the scapular region has been first covered, then the deltoid, the axilla entirely. the under and inner surface of the arm as low as the elbow, and the whole of the pectoralis major, will not have suffered the slightest inconvenience at any time beyond the outward tenderness; from this you will judge the varying character of pain as a symptom. Herpes appears indifferently on either side, and has no speciality for age or sex. In many cases of Zoster the cause is intangible. But cold, applied either in sitting, lying, bathing, or exposure to currents of air, will often produce it.

You may suffer, after riding, driving, or sailing in a cold wind, from Herpes Labialis, the first sign of which is the sensation of something adherent to the upper lip, generally on one side, though both may be attacked; on feeling, you find a smooth and slightly swollen spot. The swelling increases next

day, and the day after there are a few vesicles visible, more perfect if on the skin than on the mucous membrane; for on these surfaces the eruption is generally more rapid, and the vesicles are quickly broken if ever perfectly formed; in another day the vesicle is opalescent, gradually proceeding with subsidence of the swelling to a dark scab; if this is removed from the mucous surface, the spot bleeds slightly. Now these are the phenomena of all Herpetic eruptions.

Herpes of the scalp arise sometimes after bathing; unlike herpes labialis, it is preceded by one or two days' great pain, and then there is an eruption, sometimes over the entire head, of thickly clustered numerous large vesicles, from a pea to a bean in size; the forehead, nose, eyelids, and one or both ears may also be attacked, the pain subsiding with the appearance of the eruption. With such a case the febrile concomitants are distinctly marked. Herpes may attack the inside of the mouth, nose, or female genital organs; when it attacks the male, it is called Herpes Preputialis, and is seated on the prepuce or edge of the glans. This form of herpes is remarkable for the extent and severity of the neuralgic pains that sometimes precede the eruption. Commencing at the heel, they run up the posterior inner surface of the leg and thigh, then into the glutæi muscles posteriorly, and through the perineum, coming up anteriorly under the scrotum. The pain is at first a tingling, afterwards becoming

more severe; on one occasion the patient was sure that rheumatic fever was impending. The skin is tender to the touch, and great pain and inconvenience is experienced in sitting down. This pain was sufficient in two cases to prevent horse exercise, which had no influence in causing the eruption. It does not appear that the position of the eruption has any reference to which side was affected, for, with one or both extremities in pain, the eruption on the prepuce was on one or both sides, or in the median line indifferently. It is scarcely conceivable that this variety of herpes can be mistaken for a specific sore; but if you have any doubts, a piece of lint dipped in any astringent lotion, to keep the surfaces apart, will show you in a few days if it is herpes. Hebra states that neuralgic pains are absent in this disease; and Dr. Damon, instead of pointing out so transparent an error, explains it as a fact, by pointing out the limited distribution of nerves in these cases; after which you must not be surprised at any theory a writer with neurotic proclivities can enunciate. Of equal value with the above are the statements of Duclos and Parrot, that asthma, rheumatism, and dysentery are predisposing causes or usual concomitants of herpes. The congestion that causes herpes, instead of being sharply defined, may be shaded off, and then, surrounding an herpetic patch, you have concentric rings presenting the hues of ecchymosis; this appearance is called Herpes Iris, and is simply a curiosity;

and when herpes arises in circles or segments of circles, more or less broad, and varying from an inch to three inches in diameter, it is circinatus. The latter might be taken for *Tinia Circinata*; you must therefore notice that the vesicle in the latter is not part of the disease, it is only accidental, and that the rings in *Tinia Circinata* gradually fill up with eruption not changing in character, whilst in *Herpes Circinatus* the rings remain distinct, and any fresh eruption is different from the past, as the latter has gone through some stages more. There are some other distinctions, such as duration, but the above will be sufficient for diagnosis. After all these remarks on Herpes, the treatment is of the simplest character; a little febrifuge mixture, and some absorbing application is generally sufficient. You must, in severe cases, see that the excretions are right, and kidneys and liver at work. If the pain is very severe, there is nothing better than a poultice of poppy heads, with morphia or belladonna internally or hypodermically. Friction must be prevented, and the blebs kept unbroken as far as possible. Flour, starch, or any absorbing powder may be applied with a dredger, or zinc ointment on lint. As in all cases where the cuticle is raised, there may be some slight superficial ulceration; in this an astringent wash of tincture of catechu and laudanum will facilitate the healing process.

From the familiar appearance produced by the sting of a nettle has been taken the name of Urti-

caria, which includes all those varieties of cutaneous eruption in which the chief feature is a wheal or pomphus. This wheal is round, oval, longitudinal, or some modification produced by the coalescence of these forms; it may be solitary, or cover a great portion of the body with elevations, varying in size from that of a split pea to an extent of several inches. It is non-contagious, common to both sexes and all ages. The wheals are formed by the spasmodic contraction of the muscular fibres of skin, by which a portion is raised above the surrounding surface. This is done without any exudation from the capillaries, though it may be accompanied by considerable subcutaneous effusion. The experiment of G. Simon, who passed a needle into a wheal and observed fluid to exude, does not afford any contradiction to this statement; unless he expected to find it hollow, it is difficult to imagine what else he could have found; if they should remain in a state of compression for a very long time, instead of the usual duration of a few hours, some exudation may take place, and the elevation of the cuticle which ensues causes a bleb, and the disease which is very rare, is called *Urticaria Bullosa*. The compression which raises the wheal is generally sufficient to prevent the circulation of the red granules of the blood, and this causes their usual white appearance; but if this compression is less, their tint is rosy, or even red, with a white centre, this diminished contraction may be owing to the unyielding nature

of the part, as in the palmar or plantar surfaces ; whilst, if the wheal is small, imperfect, and tending to a papular rash, it is called *Lichen Urticatus*. The wheals are surrounded by a variable amount of inflammation, and traces of this may be the only appearances present when the patient is showing the disease. If this inflammatory tone is sufficiently congested, it may terminate in exfoliation. When the redness between the wheals is diffused, persistent, and sufficiently continuous to form a rash, it is named *Erythema Urticans*; but generally with the wheals disappear all outward signs, unless in the neighbourhood of the orbit, where the wheals, imperfectly formed, are always accompanied by considerable subcutaneous effusion. *Urticaria* is accompanied by considerable itching and tingling ; it may consequently show the marks of scratching. Some people suffer but little from the same cause and same eruption compared with others, and the skin occasionally may rise in wheals where there is exceptional irritability, from causes the most trivial and diverse. A person who is very liable to nettle-rash is never safe from some sudden attack of the disease ; and if produced by external causes, they appear to have a special proclivity for his person. The statement of Purdon, that *urticaria* is of short duration unless it is chronic, requires some latitude, for the brevity of an attack is very varying, but it leads to the two divisions of *Urticaria Evanida*, in which the wheals are evanescent and erratic, and

Urticaria Perstans, in which they not only last longer, individually, but follow in succession for a considerable time, that may extend over years.

Some persons have the skin so sensitive that the slightest friction — rubbing the skin with a finger, for instance — will produce urticaria, and there are even cases quoted where mental emotion has been sufficient; these are amongst the curiosities of this disease. The irritation produced by the poison of an insect or plant is another frequent cause.

Urticaria may also attack females at the menstrual period without any special derangement of the uterine organs. It may also be caused by medicines or food, shell-fish, especially mussels, being well known for their irritating powers; but persons may have some special susceptibility in this matter, and some twenty articles of diet, from rice upwards, have been enumerated as exciting causes. Urticaria may also occur with acute general dropsy, following a chill, and in these cases the skin may be so congested as to present a purple hue, the wheals being very prominent, as white lumps on a dark ground; this is called *Purpura Urticans*. Habitual use of intoxicating liquors is also a cause, and it is amazing to find a portfolio of prescriptions ordered, and a proportionate quantity of medicine taken in vain, when a few weeks abstinence would have been successful. There are cases of chronic urticaria in which the cause is untraceable, or the original exci-

tant has disappeared if ever it had been detectible, affording little or no clue to the requisite treatment.

From the above enumeration of causes, as you might expect, the treatment required is most varied. When the skin is over-sensitive, cold shower-baths, following a warm bath, and then a rough towel, is the only course available. When produced by a bite or sting, the part should be squeezed, to get as much of the poison out as possible, and the sting, if visible, extracted. A solution of ammonia is the best local application, and, if in the mouth, a gargle of soda and water should be used warm—sodæ bicarb. ʒ ss., aquæ ʒ viij.

In event of a child or infant being stung at the back of the throat, tracheotomy may be requisite. Honeycomb is a favourite dish with many persons. Wasps have a similar taste, and frequently leave their sting in the honey. It can generally be seen and extracted when the mischief is done, but there is great pain, and the throat symptoms, difficulty of swallowing and a sense of strangulation, are most distressing, even in adults if the part stung is far back in the mouth. When the cause is something taken into the stomach, an emetic, a purgative, or both, may be required; certainly the former, if the case is seen soon after its first appearance. Carbonate of bismuth and hydrocyanic acid will generally prove successful afterwards, if the wheals continue to appear. In some cases, the feverish symptoms

run high, then the abstraction of a few ounces of blood gives immediate relief. A chill may render diaphoretics and purgatives, actively administered, necessary; and in chronic cases a coated or red irritable tongue will lead you to order great care in diet, and such other medicines as the state of the liver and kidneys may demand. Bismuth is the best stomachic sedative, but, if there is hepatic derangement, the same treatment is required as for exudative diseases from that cause, and mild purging, with careful diet, will frequently cure after months of unsuccessful treatment. When urticaria occurs at the menstrual period, there is generally some derangement of the liver at the same time. Unstimulating food, plenty of exercise, mental occupation, and light clothing are then necessary conditions accompanying all treatment; with camphor and henbane internally, if there is hysteria or uterine pain. Locally, the applications in constitutional urticaria are antepuritic; vinegar, acetate of ammonia, eau de Cologne and water, are most commonly used; but the iodoform ointment, or a lotion of hydrate of chloral, are more powerful. These remarks will guide you in the treatment of this disorder, which excites sympathy in no unprofessional person who has not been a sufferer from it. In addition to the irritation, almost unbearable when the plantar or palmar surfaces are attacked, there is the unpleasant feeling of not being quite certain, if you remark that you will see anyone on the

morrow, whether or not in the morning one or both eyes may be closed from nettle-rash.

The next disease to which your attention must be called is Purpura, which is an extravasation or effusion of the blood from the capillaries beneath the cuticle. This extravasation may be produced by external violence, as in a black eye, or that common occurrence a blood blister, when a pinch bruises the vessels without breaking the epidermis ; cupping also leaves it as mark ; whilst in the old and feeble, coughing will give rise to dark markings round the eyes, and in the delicate, slight pressure will leave a bruise ; all these have been described under the head of purpura ; they all differ in that the blood extravasated is healthy blood, whereas in purpura the blood is impoverished.

Purpura, or cutaneous hæmorrhage, may be occasioned by some disease such as fever, in which the general circulation is approaching decomposition ; the cutaneous appearance, then, though very unfavourable, is not called purpura, but is classed as a variety (Nigricans, or malignant) of the disease which occasions it, the name being taken from the general condition, not the special appearance. With cutaneous hæmorrhage there may be sufficient serous exudation to form a papule, and that papule tinted by the blood is termed Lichen Lividus ; whilst if blood is mixed with the serum of pemphigoid blebs, the combined appearance is Purpura Pemphigoides.

The principal cases of purpura simplex you are

likely to meet, are the consequences of improper or insufficient food, by which the blood is deteriorated, and, the capillaries weakened being no longer able to confine the current, it pours out beneath the cuticle, in the form of stigmata or points, vibices or striæ, petéchiæ, or small irregular patches, or as ecchymoses, or extensive tracts.

If, with the external hæmorrhage, the mucous surfaces participate in the discharge, to which they are all without exception liable, the disease is of a more serious character, and is then *Purpura Hæmorrhagica*. Sea scurvy has some of the features of purpura, but in addition the gums are swollen, spongy, and discoloured, and the cause, absence of fresh vegetables, is easily ascertained. The spots or marks in purpura do not disappear on pressure; their dark colour is not always present, as it depends on the collection together of a sufficient number of red granules, and if they collect gradually, there may be various shades of yellow, pink, and brown, before the dark purple appears; and on absorption there is again a succession of shades until the skin resumes its normal colour. With all cases of purpura there is more or less hepatic congestion, and you must be careful in your treatment to relieve this by purgatives; you will find that the evacuations are dark and foetid at first, and improve as the patient recovers strength. Purgatives are not incompatible with generous diet, tonics, such as quinine and iron, and the mineral acids. If you

see the case at any reasonable stage, and if it is not caused by some special virus, the prognosis is very favourable, and with the above treatment the improvement is very rapid.

Furuncular affections comprise Furunculus or boil, Anthrax or carbuncle, and Hordeolum or sty. A common boil does not always come under professional notice, the patient allowing the disease to run its course, assisted by a poultice or some peculiarly nasty application, such as soap and sugar. But if boils arrive in crops or in succession, and you are requested to see the case, you find that there has been induration and inflammation of the skin, elevation, pointing, and a discharge of pus, succeeded by a core of dead connective tissue, and the presence of this core distinguishes furunculus from acne; in the latter an opening gives exit to a collection of sebum impacted in a sebaceous gland. The importance of furunculus depends greatly on the locality affected; when that is hard and unyielding, such as in the meatus of the ear, or on the nasal cartilage, the pain is exquisite, and the whole face swells, delirium occasionally supervening; the lips, perinæum, fingers, and toes are also very sensitive; when, on the contrary, a boil is situated on loose tissue, such as in the axilla, it often becomes very large without much pain. This pain and inconvenience, or secondary effects, depend therefore not on the amount of suppuration, which varies greatly in relative proportion to the size of the core, but on the

amount of resistance of the part affected, and on its liability to friction or motion. A boil on the inside of the nose may have only the smallest drop of pus, and yet close both eyes with the swelling it occasions; on the extremities the irritation may cause inflammation of the lymphatics, and even secondary formations of matter round the glands in the axilla or groin. Boils, when very slow to their termination in suppuration are called indolent, and those furuncular indurations of the skin which do not suppurate are called blind boils.

There is great uncertainty about the exact processes which constitute a boil, and also about the part primarily affected. If mortification of a minute portion of tissue is the first cause, and the inflammation the effort of nature to get rid of the dead part, there can be no such disease as the term "blind boil" is understood to express. On the other hand, if the inflammation is primary, and the formation of a core secondary, there is no absolute necessity for the latter's existence. There has been a strong attempt to involve the sebaceous glands as originators of Furunculus, but though, if a large surface is inflamed, some of the glands must be involved in the process, yet there is no reason at all tolerably established for their being the primary parts affected. It appears that it is a question of degree; if the inflammation is slight and superficial, a pustule is caused, and if deeper and more extensive, the part attacked soon passes the boun-

dary line of resolution by any process of vitality, and has consequently to be thrown off as dead tissue. To enumerate all the causes of Furunculus would be to state everything that causes debility, and this debility is not merely to be measured only by muscular force, but by the healthy relation of supply and demand in the various nutritive processes as well. The treatment, constitutionally, is therefore to restore the balance of nutrition, to remedy the effects of excess in any form, and to repair the consequences of mental or bodily exhaustion. This is best done by tonics, quinine being the most efficacious; but, if there is indigestion, alkalies, with other bitters, such as gentian, may be first requisite. If the state admits of quinine being used, the mineral acids, sulphate of iron and Epsom salts, form useful adjuncts, the salts keeping the bowels free, an essential condition of success. If the liver is torpid, five grains of calomel, with or without opium, to soothe the pain, is the first thing to be given, and, followed by an aperient draught, may be repeated as often as required. Opiates may be a necessity to procure sleep, which alone excuses their administration. If the lymphatics are inflamed and there is much superficial erythema, antiphlogistics may be best for two or three days, with warm external applications, to assist the suppurative action. Locally, the best treatment is a free incision through the induration, even before any matter is formed; it relieves the pain, hastens the suppura-

tion, and lessens the danger of a cicatrix. If the patient or practitioner have an invincible objection to the knife, touching the surface with caustic potash, or the acid nitrate of mercury, assists the escape of the core. Poultices of any kind are agreeable and useful. They may have charcoal, nitric acid, carbolic acid, or turpentine mixed with them, as the case demands stimulating or antiseptic remedies, and if feasible, the parts not affected may be protected from the softening action of the heat and moisture by a piece of leather or vulcanised india-rubber, a hole being cut for the sore.

Anthrax, or carbuncle, is a multiple boil, in which the skin dies. It discharges from many openings a glutinous exudation, which is merely the fluid retained in the dead tissue escaping. It is flatter, broader, altogether more serious in its nature than a boil, and is always followed by a permanent cicatrix. Anthrax is a disease of advanced life, and may be fatal, either from the system not being able to withstand the drain of a large suppurating surface, or from inability to repair it. The cause of the carbuncle may also be irremovable, and others may be formed, the primary disease being in full force all the time. In such cases, the patient may sink from accumulation of disorders. Usually situated on the posterior surface of the neck, the appearance of a carbuncle is various, depending on the stage in which it is seen. It may be hard and indurated, or soft and pasty, red and

inflamed, whiteish, or any shade from blue to black, and is sometimes studded with the bullæ of mortification.

The same treatment is required for this disease as for boils, only on a larger and more vigorous scale. Stimulants must be freely administered, and with the best prospects of success when their use has not been habitual. Various local applications have been recommended, such as pressure, plaisters, caustic, etc., and some of them have been found nearly as good as a free crucial incision through the dead tissues, repeated whenever any tension from fresh matter may arise.

Hordeolum, or Sty, is a furuncular inflammation round one of the Meibomian glands. It is very indolent in its progress, and is rarely limited to one formation. Touching with a lancet, or even a needle inserted, will assist its course. Generally attacking children, it always requires tonics, with or without alkalies, regulation of the diet, and careful attention to every means of improving and strengthening the general health.

LETTER IX.

Animal poison germs — Absorption — Growth — Consequences —
 Conditions of Growth — Local — General — Properties —
 Permanence — Varieties — Special Influences — On the circu-
 lation — Irritation — Stagnation — Protection — Amount —
 Permanency of Existence — Elimination — Post-mortem
 Wounds — Polynesian Islanders — Dr. Shorthouse — Hydro-
 phobia — Permanency of Virulence — Effects of Quantity —
 Alteration of Type — Insensibility to Germinal Disease —
 Treatment of Germinal Disease.

Syphilis — Properties — Action — Consequences — Permanency —
 Elimination — Hereditary Syphilis — Varieties — Curious Twin
 Case.

SIR,

Many cutaneous eruptions are caused by the absorption and growth in the system of an animal germ, called a poison or disease germ.

The growth and multiplication of these germs in some respects is like the multiplication of vital or healthy germs, but they all have, more or less, the property of causing decomposition of the vital fluids, and also of causing irritation. On the former of these two properties their special poisonous action depends, the latter quality being common to many other substances, organic and inorganic.

Disease germs absorbed into the system may

perish or be eliminated without giving any sign of their presence; may cause some slight disturbance, and then be eliminated; or may grow and multiply exceedingly; it is quite immaterial whether this multiplication is produced by increase of the disease germs alone, or if with their increase they cause some of the vital germs to become disease germs.

The growth of disease germs depends on the state of the system, and its powers of resistance, on the quantity of disease germs absorbed, and on the special virulency of the germs, which implies their capability of causing those changes in the circulation which are favourable to their growth.

The growth of these germs, like the increase of vital germs, may either take place locally or generally; it may be rapid or slow; and disease germs may long remain in the system, without giving any sign of their presence, unless assisted in forming locally some favourable conditions for their growth.

When quiescent, or when not sufficient in number or power to affect the circulation, however these germs may injure the general health, they give rise to no definite diseases. A certain number may possibly be absorbed, or a certain number may form, without in either case influencing the circulation, but unless they do exercise such influence, their presence or absence apart from protective power or general deterioration is immaterial;

elimination and quiescence or loss of virulence are practically the same.

The properties of disease germs are, the power of causing decomposition, to which stagnation is a preliminary stage, and the power of causing irritation.

These two properties vary in the permanency of their power; and the disease germs vary again in the duration of their retention in the body, and in the time that elapses before their final elimination. The power of causing decomposition is a comparatively permanent power, though gradually disappearing; such disappearance is due to loss of quality in the disease germs.

The power of causing irritation, very variable in its quality, is always of a more transitory character; at the end of a few days, or of a few weeks, the system becomes accustomed to the presence of the germ, and then the power of causing irritation ceases.

These common properties of disease germs are different in each variety of germ, the changes are infinite; thus you find one germ very putrefactive, slightly irritant, and very permanent; another germ very putrefactive, very irritant, very quickly eliminated; another very irritant, slightly putrefactive, slowly eliminated; another slightly putrefactive, slightly irritant, slowly eliminated, and so on.

In addition to these variations, you have those germs that are incapable of causing general changes

of the system ; the variations between slow and rapid growth ; and also between the continued existence of the irritant power or its alternation with the manifestation of putrefactive power.

Stagnation and irritation are apparently directly opposite qualities, but if you consider motion or life as one pole of a circle, and stagnation as the other pole, you will see that the latter can be reached by following either segment of the circle, and though midway the conditions existing are widely apart, yet the end is the same on both lines of disease.

Whatever special qualities a disease germ possesses, its preference is always to cause stagnation ; if it succeeds the case is soon over, if it does not succeed, if at the time when its increased growth is sufficient to threaten rapid decomposition, that growth is sufficient to cause irritation, and so run back to the opposite divergence from health, yet there may be sufficiently permanent stagnant principle as to threaten life when the system is exhausted, by continued irritation ; and though the stagnation is not strong enough to do so at first, we constantly see, in intervals of reduced irritation, the stagnant principle pulling against existence.

The germs of disease cannot grow freely unless they can affect the system either by lowering or quickening the circulation ; they have each some special attributes and preferences in their mode of growth ; we have just noticed the stagnant action ; the irritant though directly opposite has sundry

advantages for the disease, and sundry dangers to life.

Excessive irritation causes stoppage of all nutritive processes and of all elimination, thereby retaining the poison germs in the system; and as it causes great increase of the formative germs, without supplying them with proper pabulum to increase from, the growth of both formative germs and disease germs is by the absorption of material already present, and they therefore naturally assist each other's multiplication at the expense of the system. We thus have exhaustion, after fierce or long continued irritation, and also such secondary consequences as destruction of parts by long continued congestion therein.

The stagnant principle is very permanent, the irritating principle is very transitory by comparison; the latter has the advantages of being the natural antidote to the stagnant principle, of showing us what we must do to meet stagnation; and also of being a protection against further irritant action of the same germ to a limited extent.

The protective action of previous invasion of a disease germ is purely against the irritant principle of such a germ; and this protective action depends on the presence in the system of some of the germs left by the previous attack. It is more effectual, the slower the disease germ is eliminated, therefore the nearer the time is from a first attack of that germ; and also it is more effectual as the germ's

growth is associated with great irritant action. The state of health is also an important item, that being the same, if originally it took such a quantity of a disease germ represented by " x " to produce constitutional effects, and the quantity left in the system be considered as " y ," it will take at least the absorption of a quantity greater than " $x + y$ " to produce a fresh attack.

There are only two ways by which a disease germ is eliminated from the system ; one is mechanically taking place whilst the germ is alive ; in this case it escapes accidentally though any of the channels by which matter is excreted from the system, for there is no selective principle by which any glandular action expels the germ ; the other way is when the germ dies, and is eliminated as waste matter. The permanency of the presence of disease germ therefore depends on its being sufficiently vital to avoid the latter way, and sufficiently fortunate to remain unentangled by any excretory current, or in any waste of tissue.

It is supposed that with death and subsequent putrefaction a poison germ dies. However this may be, the results of dissecting or post mortem infection are sufficiently serious, however long after death. But if the account of some of the Polynesian islanders be correct, they must be aware of even more startling powers, for according to one author they poison their arrows by steeping them in the bodies of those six months dead ; and Dr.

Shorthouse states that the virus of hydrophobia is not rendered inert by immersion in nitric acid, caustic potash, lunar caustic solution, etc., for three months, the rags on which saliva had been placed being almost reduced to fibre, in fact destroyed, and yet capable of communicating the disease. Without entirely agreeing with him that therefore lunar caustic is valueless as an application to suspicious bites, — for it would be sufficient if the absorbing power of the surface were destroyed, and the poison thrown off with the eschar, — yet it shows the great indestructibility of disease germs; and Mr. Hogg, in a recent work, states that it took several hours' boiling in nitric acid to destroy fungoid germs.

The permanence of virulence of disease germs is a very varying quality. When they attack a system entirely free from their presence, this virulence slightly increases with the germ growth. After attaining a certain indefinite increase of virulence, the virulence commences to decrease, until at length it entirely disappears; and the quality of virulence can never be a stationary quality, it must either increase or decrease.

The quantity of germs absorbed is an important item, for though no amount of quantity will equal in virulence a different quality, yet a certain quantity is necessary to cause such alterations as permit of germ growth.

The laws derived from the above principles will have often to be repeated and exemplified, and from

their consideration, from what we see of vaccination, and from the fact that a germ disease, confined to a locality, a district, or even a nation, loses gradually its virulence, we shall again have to notice the following inferences: 1. That by continual multiplication in systems unfavourable to its growth a special disease germ may lose in time its virulent principle to such an extent as to be unable to recover it. Such altered germ would therefore then produce diseases having a certain resemblance to the diseases produced by the original germ, but in a much milder form. The converse is also possible, that by multiplication in systems very favourable to their growth, disease germs may acquire fresh virulence each time of change, until a fresh and more severe type of disease is established. 2. That the acclimatisation or insensibility to germinal influence may arise from continual absorption of disease germs, but in such minute quantities that they are never able to produce systematic disturbance.

To meet the effects of animal poison germs, the following courses are open,—to destroy these germs in the system, which is at present quite beyond our power, and it is very doubtful whether we shall ever possess such a power; but we may endeavour to render the blood incapable of supporting the life of the disease germ, to check its growth, and hasten its elimination; and in so doing we prevent the results which germinal disease causes.

As germs only grow when they can cause such

results, this treatment is in some cases very successful, in others tolerably so ; but it is always attended with greater success when the germinal influence to be antagonised is of a putrefactive, than when it is of an irritant character.

The virulency of syphilis is weak, but very permanent ; the germ losing its power slowly, and being equally slowly eliminated from the system. Its predominant property is to grow and cause stagnation locally ; if it should increase rapidly, or if there should be a sufficient quantity absorbed originally, the germs may cause general irritation ; but this irritation is of a very transient character. These disease germs, like other animal germs, cannot multiply unless they can affect the circulation, the special predilection of syphilis is to cause stagnation ; they cannot do this generally, but they may be enabled to do so at a part or parts of the body, and the permanent character allows them to lie in wait for any depression of the vital powers, when they seize the favourable moment for a demonstration of their existence.

The exact action of the germ when absorbed, is to retard the circulation. You then have all the symptoms of depression,—lowered pulse, absence of colour, dulness of the eyes, lassitude, etc.

The blood is rendered thin and watery, the red granules decrease in number, increase in size, and become soft, pliable, and easily mix with the fluids, losing their separate existence ; the white corpuscles

increase in size, and become softer in texture ; as a consequence of this state of things, at some point or points of the tissue, the enlarged white corpuscles become incapable of passing through the capillaries ; you then have a point of stagnation around which both white corpuscles and disease germs increase and multiply ; as a consequence of such increase of white corpuscles, you have the various hypertrophies of scales, and tubercles ; or if there is exudation beneath the epidermis, papules, to all of which formations the syphilitic germ gives the characteristic sign of red granular matter mixed with the fluid exuded.

There is no difference in actual formation between exudations from a non-specific cause and a syphilitic cause, except this red admixture, and the fact that syphilitic exudations are always very languid and slow ; a state is produced which is only possible locally, for if the general system were so depressed, we should have death ; the local equivalent occurs in some forms of syphilitic skin disease, as ulceration or death of tissue. There is no tendency in the syphilitic germ to produce vesicular or weeping exudation ; such exudation occurs when there is pressure and obstruction, or when the blood is so thin, and the capillaries so weak, that the fluid part escapes. Now the action of the germ in the first case takes off the pressure ; in the latter, destroys the tissue. The epidermis may separate, and from beneath the uncovered spot

sanguineous matter may exude, but such separation is either purulent or the separation of decay, and is entirely different from non-specific, non-contagious exudation.

If the disease runs for a long period, only showing itself at intervals, the earliest and latest stages are both seen in the same forms, and what is termed a trace of the poison may really be, either the commencement of its hostility, its full vigour held in check by robust health, or the last signs previous to complete elimination.

You must then recollect, that however highly the inflammation, usually limited, of syphilis may run, in all cases the disease is one of stagnation and deterioration of the blood. The state of things produced as a consequence of such action, is met by supplying the blood with a power which is common to poison germs, but which in this special germ is slightly marked, this is irritation, which we have seen is directly opposed to stagnant action; we do not therefore destroy the germ, but merely prevent its effects being demonstrated until it is eliminated, and between any manifestations of the disease we endeavour to strengthen the general health.

The medicines we use for the above purpose, which have to possess an irritating action sufficiently greater than the stagnant power of the virus, also assist elimination incidentally.

We have already seen that many irritating substances, such as some kinds of disease germs, in

time lose their effect, becoming tolerated in the blood, whilst other substances such as arsenic, are so permanently hostile that their free use is limited. The medicines which can give a sufficient shock to the system to antagonise the growth of the syphilitic germs belong to the former class, and therefore the results obtainable are modified by the temporary nature of the medicinal activity compared with the permanency of the germal virulence, and also by secondary unwished-for consequences, that each preparation employed may specially produce.

We will now consider the details of the various syphilodermata, then the medicines we have to meet these diseases, their mode of action, and forms of administration.

The two forms into which the syphilodermata are divided, are hereditary and acquired. Hereditary disease may depend on the male or female parent; if the ovum is the medium of infection, the result is influenced by the quality or quantity of disease in the male. Thus we may have abortion, miscarriage, premature labour, or a dead child, as the disease germs are sufficient to destroy the vitality of the foetus at an early or late stage of its growth; and the mother may show signs of the disease during pregnancy, or after the evacuation of the uterus; and the child may be born with an eruption, or that manifestation may not appear for some months after its birth; in the latter case the mother may entirely escape. There are some curious facts

connected with this subject; for instance, both parents with severe syphilis, twins are born, one of which shall be free and the other covered with scales and other forms of the disease, and the uninfected one remain so during the whole period of lactation and for six years afterwards, possibly longer; allowing that the first twin is formed by a separate connection from the second, and that in the latter case the seminal fluid is secreted healthily, and not retained sufficiently long to become infected; yet the fact remains that a child can be suckled by a diseased mother, and not suffer soon, if at all, from the maternal state.

As we infer from the seminal and lacteal secretions communicating the disease, that by the excretory glands the germs pass away from the system, the twin case mentioned has some importance, for supposing the origin of existence freshly secreted to be free from disease, yet it shows an insensibility to infection from poisoned milk that is very rare, for in other cases we have both parents diseased, the child also, the latter giving the disease to a wet nurse, who infects her own husband and child.

The appearances in children of syphilis are brown scales, on a surface more or less inflamed, tubercles of every size and form, and snuffling from inflammation of the nasal membrane, whereby there is great difficulty in breathing through the nose, and consequently inability to take the breast, except in gasps. In minor cases, where the disease appears

after some months, the tendency is to scaly patches, and you will notice that the teeth are rough and imperfectly formed, and the nails and hair both show diseased action.

LETTER X.

Acquired Syphilis—Mucous Membranes—Varieties—Symptoms—
 Glandular Swellings—Erythema—Lichen—Copper-coloured
 Stains—Duration—Ulceration—Definite appearances—Many
 appearances—Variations—More or less Stagnation—Termina-
 tion—Itching—Poulticing—Syphilodermata—Face—Head—
 Nose—Scrotum—Indurated Cicatrix—Baldness—Local—
 General—Perinæum—Tubercles—Verrucæ—Onychia—Plan-
 tar—Palmar—Diagnosis.

SIR,

A description of the various phenomena which are concurrent on cutaneous diseases of the skin, resulting from an acquired attack of syphilis, necessarily includes the various diagnostic signs which accompany those phenomena, and therefore a separate and detailed notice on diagnosis will not be wanted.

The first sign of secondary syphilis is generally seen on the mucous membranes of the throat or tongue; the great vascularity, exposure to heat and cold, and thinness of the mucous membranes on those spots favouring congestion of the blood. This local manifestation varies much in its severity; it may merely amount to a tendency to sore throat, without any obvious cause, the disease coming and

going erratically, appearing when any irregularity of habits, undue exposure or change occurs, which makes an extra call on the system.

These affections of the mucous membrane may be slight, and yet very painful; if seated on a part which is moved in eating, the distress is out of all proportion to the visible mischief, which may be only redness of the membrane; if on the tongue, though the surface seems simply abraded, substances such as cheese are very painful; on the other hand, a large ulcer may be seen behind a fold of membrane on a quiet spot, or be found under the tongue, and yet in either case the patient is perfectly free from physical annoyance.

Affections of these membranes are not only the first seen, but they are often the last detectible, and they are generally present at all periods of the existence of the syphilitic germ in the system. They may be ulcers, simply congestion, redness at the apices of the sublingual follicles, or little red patches on the surface of the tongue, or they may be seen as white streaks, with very little inflammation. The membrane being thin does not retain the formative germs, which readily escape; when, however, they are retained, and their action is weak, you have evidences of their presence in soft little enlargements, called mucous tubercles. The brown tinge, which is an accompaniment of the syphiloder-mata, is not visible when these membranes are attacked; but such attacks are very suspicious, and

though you are not *quite* justified in pronouncing a doubtful case of exudative disease as syphilitic merely by the membranous symptoms, it is most frequently due to the presence of the poison germ ; and it will not be necessary to repeat that, in all cases of suspicion, these mucous surfaces must be examined.

You may, in all cases of syphilitic ulceration or irritation, have consequent glandular swellings ; but you must not therefore be prevented from following an antisymphilitic course of treatment.

If you have a broad band, or a patch of deep redness, showing no tendency to exfoliate, you have syphilitic Erythema ; before this returns to a healthy condition, the excess of formative germs is expended in forming scales. When there are papules of a pale red, with a slight brown scale very slowly falling off, it is syphilitic Lichen ; and if there are scales slowly forming on an inflamed surface of a brown or copper-coloured hue, it is syphilitic Psoriasis.

This brown hue is caused by the red granules being mixed up with the serum of the blood, and is a constant sign of the syphilitic germ. There may be stains alone, the previous congestion having arisen and passed away unnoticed, or the stains may follow more or less inflammation ; they do not disappear on pressure, and last for a long time, on parts exposed for months, on parts covered for years. No medicine, internal or external, has any effect on

them; they gradually become more faint in time, and to time you must leave them.

The redness of syphilitic Erythema may be of a most transitory character, and the parts affected may at once proceed to ulceration. This ulceration may also proceed from a centre or centres, and form sores of many square inches in extent; or it may run in serpiginous bands over the skin. The depth to which this ulceration proceeds also varies, in some cases being superficial, in others destroying the substance of skin entirely. In all the syphilodermata, any pus that is formed is never laudable or bright yellow, it is a thin semipurulent whitish yellow, with a brown tinge, easily forming friable crusts, whilst any ulcerations show no tendency to heal.

The general characteristics of syphilitic eruptions are the slowness with which their actions proceed; the excess of formative germs is limited in its effects by the deteriorated quality of the pabulum supplied; the tinge of brown given to the eruptions; the long duration of such eruptions; the concomitant affections of the mucous surfaces; the clear, definite figure or outline of the eruptions, or else the total absence of definition, and presence of variety of forms; and there is generally very little irritation.

It would appear as though most of the fanciful names that have been given to exudations have all been derived from the syphilodermata; whilst the

unequal growth of the germs in different localities, as the special local peculiarity assists or checks the germ increase, causes cutaneous appearances that none of Willan's definitions embrace as a whole.

The syphilodermata are produced by excess of formative germs, the excess being due to local increase of poison germs; consequently, their actual figure is immaterial. That the appearances are gyrate, annular, etc., is a matter of no consequence, but the form of the eruption shows whether the action of the disease is very slow, slow, or active, and sometimes whether the quality of the blood is normal or deficient in nutritive elements.

When the diseased action is very slow and not very powerful, which means, if the circulation is but little retarded, we have the various forms of tubercles, which include the soft enlargements in the subcutaneous tissue, called gummy tumours, from the putty feeling they give to the touch. A little more obstruction to the healthy action produces papillary growth, or warts, which may be found either on the warmer or colder parts of the body. Increased stagnation produces formation of epidermis, or scales, and these are either in one large mass, like a corn, or are thrown off more or less freely and plentifully, this leads to the condition of activity when squamous formations are combined with effusion, or with such an amount of inflammation as causes ulceration.

All these conditions terminate equally in ulcera-

tion, when the system is weak, either from starvation, dissipation, or any other cause.

The poison germ of syphilis gradually losing its virulence, we may have great resemblance between the stage of incipient growth, great virulence, and great resistance, and the stage of great multiplication, little virulence and little resistance. Any mechanical assistance to stagnation, either temporary or permanent, may seriously assist the action of these poison germs.

Though absent generally, you may have itching at any stage, or in any form of specific disease; and you may also have it very intensely when no sign of disease is visible, it is then precedent, the changes going on in the vascular tissue are not visible to the eye, but are sufficient to cause the irritation. You have seen the effect of a poultice on inflammatory scaly eczema, compare it with the effect in the disease at present under consideration. On the sole of the foot a scale is formed, if undisturbed it arises, and terminates its existence as a scale, with or without additional breadth of exfoliation of the epidermis; the locality happening to be where there is continual friction, it becomes painful, and a considerable amount of superficial inflammation is the result. To subdue this a poultice is applied, the inflammation disappears with the heat and moisture, which equally softens and weakens the scale which is raised into a vesicle or bleb, not prominent as in eczema, but barely raised above the skin. This

vesicle is identical with the first appearance of a primary sore, is filled with a whiteish semi-purulent fluid; on opening this vesicle you have an ulcer of a greyish tint, exactly the size of the antecedent scale, with sharply cut edges, perhaps slightly raised, discharging unhealthy pus having a great tendency to incrustation. This is a secondary specific ulcer, which only differs from a primary one in difference of virulent power.

The face and head are liable to all forms of syphilodermata, papular, scaly, or tubercular. A large papule will soon have an increase in the size of the capillaries adjacent, and you may see a distended vessel arising like a red line to supply the morbid growth, or there may be many, giving a stellate appearance to the papule. This, which was considered characteristic of other hypertrophies, is therefore useless as a diagnostic sign.

When situated in the hair, the colour may not be easily recognised, and you have therefore to judge by the other signs, recollecting that moist forms of non-specific exudation are unusual on the scalp of the adult.

There is often, also, on the face, an aggregation of papules on a common base, presenting a corrugated appearance, as though the surface of the tubercular mass had been notched transversely both ways by a knife.

When the nose is attacked internally, the discharge is offensive, though the disagreeable odour

may be very slight and only perceptible to the patient. There is also running from the nostrils, without any apparent congestion of the mucous surfaces generally, and the patient is surprised, on feeling something at their margin, to find it a drop or two of discharge. When the external surface of the nose is attacked generally, you may notice general hypertrophy and enlargement of it. It attains a great size, the skin being much thickened, swollen, and red; the orifices of the sebaceous glands are enlarged and distended, orifices, into which a swan shot can be placed. These orifices may, or may not, be the seat of ulceration, in the latter case, when the general disease has subsided, they leave permanent marks, exactly like small-pox scars.

The scrotum is a very common seat of specific disease; it is preceded and accompanied by great irritation, the skin inflames, produces a very slight scale, which is rubbed off with scratching or with friction, and leaves a red, raw, bleeding surface, or one slightly ulcerating. On the glans, dark red markings frequently come in the later stages of the disease; they may be punctate, striate, or in patches, and accompanied by some slight irritation; their appearance is very distinct, characteristic, and superficial, and they disappear without any visible desquamation. On the prepuce, you will often find the remains of a primary sore, marked by a collection of lymph underneath the skin, which is called an indurated cicatrix. This may be like a pea, round

or nodulated, or it may be lamellar, like a piece of cardboard, and only to be felt by taking it between the fingers. For many centuries, this appearance, which you must not confound with a real cicatrix, such as is seen on the glans or its edge, had been a source of anxiety to practitioners, for as long as it was present, they declared the patient with some truth to be unsafe. All sorts of remedies were suggested: extirpation with the knife, tightly bandaging with a strip of plaister, mercury internally, with or without the iodide of potassium; and, with the exception of cutting, all means failed to remove it; an unlimited amount of medicine had not the slightest effect. A distinguished medical officer in the Royal Artillery showed that, by the application of a small blister, with or without some subsequent irritating dressing, the induration was removed, and all the difficulty was gone. It is some matter of doubt if it is imperative that this should be accompanied by a mercurial course or not; whether this induration, like in some of the cases quoted of hydrophobia, may not retain a certain amount of germs confined in the lymph until this is absorbed. You may see cases in which the absorption is accompanied by fresh cutaneous eruptions, and also some in which it is not; and it is difficult to say that in the former they are caused by fresh virus from it. But as you are seldom consulted for this indurated cicatrix alone, it is always judicious to cause its disappearance whilst treating the other symptoms.

Baldness is a concomitant of specific eruptions; it may be partial, showing, in some places patches, with the hair generally withered and broken, or it may be universal, the hair and whiskers coming away on the slightest tension.

In nearly all cases of these eruptions, there is considerable falling and thinning of the hair of the scalp, owing to imperfect nutrition; but the complete loss of all is very rare, and gives an extraordinary appearance to the patient.

The parts round the perinæum in both sexes are liable to be attacked by soft flaccid growths, sometimes as large and as elevated as half a walnut; though they vary in size and number, and are situated indifferently on the skin or mucous membrane, are pale in colour, and may be slightly ulcerated with some discharge; they are not so deeply seated nor so hard as cancerous growths in the same localities, and are more numerous; you will sometimes see a dozen at once. Of a similar character are the enlarged papillæ or warts, which are favoured by the heat and moisture, and which are frequently the seat of a most offensive discharge, partly the same as in Intertrigo, partly specific. The nails are liable to have inflammation of a syphilitic character round the matrix, which may be involved to the extent of suppuration; if this occurs, the nail is loosened if not actually cast off, and weak fungoid granulations form underneath and overlap the edge, or the growth of the nail may show the

disease, being hard, harsh, and brittle ; neither of these affections are usual without other symptoms, and any inflammation round the base of a nail gives much the same appearance, owing to a hard unyielding surface being implanted in a swollen bed.

As you may have gathered from the foregoing remarks, the question of ulcerating or non-ulcerating syphilodermata, is immaterial if not accidental ; to this may be added pustular, or non-pustular signs. A slight alteration in the relative powers of health or disease, or an accidental or incidental change in the outward conditions, will give one or another form. When the inflammation on a part exudes sufficiently to raise the skin as an imperfect bleb, which contains a mixture of blood and serum, it is called *Rupia* ; after the epithelial coating comes away, the exudation continuing forms layer beneath layer of dark crusts considerably elevated—this is *Rupia Prominens*.

The scaly forms of syphilitic eruptions are very numerous, but the only ones we need more particularly notice are those on the palmar or plantar surfaces. The whole cuticle on the plantar surface may come away without any observation, and it may be only accidentally detected ; the surface underneath may be red, or very little changed, as the process has been rapid or slow ; or, again, there may be a single large formation, small formation, or numerous spots, in which the cuticle is apparently changed into a semi-lucent callosity. The

spots may, as we have seen before, change to ulcers, or remain torpid for a considerable length of time; or the inflammation may run on all sides from them as a centre, the skin peeling off, but not being quite so deeply involved. The difference between the palmar and plantar affections consists in that the latter are not so visible, and consequently not so closely watched, in the first place; and, secondly, the extra thickness of the plantar covering, and its protection from outward influences, combined with the retention of the heat and moisture by boots or shoes, modify the eruption. On the palms the redness is often very general, and of a deep colour; this is followed by desquamation at first, possibly of thick scales; but if so, they soon change to furfuraceous ones, and the inelastic state leads to much rupture of the surface into cracks and fissures. The distinction between specific and the eczema of the palm, called *Psoriasis Palmaris*, is often very obscure, and the diagnosis most difficult. At one period they are identical in appearance, and you have therefore to rely on the other signs present in the case to assist you; if, for instance, you find scaly eczema on one or both shins or elbows, it may determine it to that class, whilst nodes on the tibiæ might show its specific character. If, with the conditions necessary for an eczem, you have in addition specific disease, the forms the latter assumes take the primary place, and these complicated cases are the worst in appearance, and most

obstinate against treatment. There are many other symptoms described as concomitants of cutaneous specific eruptions, neuralgic, hæmic, mental, functional disorders, *ad libitum*, but you may not see any very noticeable; on the contrary, the patient may be apparently in the best health, certainly in good spirits, eating, drinking and sleeping well, and taking considerable amusement, with an immense deal of exercise, treating the matter very lightly. The question is put, "What am I to do?" To enable you to answer this satisfactorily is the next point to be considered.

LETTER XI.

Properties of Syphilis germs — Action of Mercury — Objections to its use — Forms of Disease — Complications — Dilemma — Faulty Administration — Properties of Mercury — Special Treatment of Syphilis — Hunt on Mercury — Primary Sores — Secondary Effects — Medicines used — Mercury — Action — Opposed to Syphilis — Iodine — Action — Gold — Action — Idiosyncracies — Mercury and Iodine — Iodine and Iron — Gold — Arsenic — Mercury internally — Soluble Salts — Insoluble — Vascular Action — Antidote — On other Diseases — Duration of Course — Rheumatism — Galvanism.

SIR,

To answer the question at the conclusion of the last Letter satisfactorily, the facts of the syphilitic germ being very slightly irritant, very permanent, and tolerably putrefactive, must always be in your recollection.

As previous attacks of disease germs are only preservative against future attacks when the principal action of such germs is to cause irritation, so one attack of syphilis is no obstacle to later attacks. On the other hand, as its putrefactive power is limited, so no amount of quantity or virulence can reduce the general vitality below a certain point, and this putrefactive power is always a decreasing power.

If any given syphilitic germ is so virulent, relative to the vitality, as to be capable of destroying tissue *per se*, in such destruction the germ itself either perishes, or the channels by which it can enter the system are sealed against such entrance by the concomitant circumstances which destruction of tissue entails.

The treatment of secondary syphilis has varied greatly in the course of years, at one time mercurial, at another anti-mercurial. By some mercury has been looked upon as a specific remedy, by others as actually injurious. Syphilis, once cured, has been stated to be a preservative against future attacks, and syphilisation the proper treatment.

This latter idea has been promulgated in entire ignorance of the cause of the disease, and the former statement is entirely erroneous. Mercury is not an antidote, it merely meets the effects of the disease, and it is quite possible to meet these effects in other ways sometimes, especially if you have full command over the habits and actions of your patient. It is not always easy, even if it were always judicious, to trace out the means by which the system has been affected, possibly accidentally, but when several persons have been inoculated from the same acknowledged source one may have the disease very slightly, another very severely, and a third not show any constitutional symptoms.

Now the first and last of these cases may get well without any medicine, or notwithstanding any

medicine given, and they cannot therefore require mercurial treatment.

But even the most forcible advocates of non-mercurial treatment do not claim for it universal application. There are some forms in which they admit mercury is absolutely necessary; now holding that the diversity of form is mainly accidental; this admission would be fatal to their views; and this opinion of syphilitic forms is recommended for your adoption.

If you have cases in which mercury is prohibited by the peculiar idiosyncrasy of the patient, or by other diseases or state of health which from their nature reduce the syphilodermata to a secondary consideration, you must be guided by the major evil, and trust that the minor evil may subside. Mercury is generally one of the most harmless and innocuous drugs in the *Materia Medica*, and, when properly administered, productive of the greatest benefit, leaving behind only a strong tendency to lay on fat. It then comes to this: Are you to wait patiently, doing nothing whilst the specific poison pursues its course, for weeks or perhaps months, ravaging and destroying at will, until its intensity has subsided, entirely unchecked, not knowing when the favourable change will take place, or even if it will arrive at all? An answer to this question is the reply to the question, Shall or shall not mercury be given? Some people have a horror of mercury—they are frightened by the name; if

they give it, they do so in a weak and wavering manner, injuring the patient, discrediting the drug, and favouring the disease. Ignorance of the power of medicine generally gives a want of confidence, which is shown in that semi-reliance on Providence and prescribing sometimes visible; in many diseases there may be a doubt as to whether the path pursued is the right one; there can be no such dubiousness in syphilis, it is at first practically either mercury or nothing. To some extent the reasons for the above-named want of confidence in mercury lies in the difficulty, not to say impossibility, of defining the properties of this drug by one or two words; for its action depends on the dose, length of time it is administered, and frequency of administration. Thus you have primary and secondary effects, which may be entirely opposed to each other. Pereira calls mercury a spanæmic resolvent, and Hunt a tonic. It certainly has a resolvent action, and to that extent must be a tonic. The spanæmic tendency is not a primary effect, and never ought to occur.

As the treatment of the syphilodermata is special and entirely different from that of any other disease, it is important that you should know them readily, and treat them properly, for in no other affection does mismanagement at first so entirely cripple subsequent efforts, by rendering the only medicine to be used of no effect, so that the first thing to be done is frequently to undo all that has been done before

commencing afresh on entirely different principles. The name of Hunt is usually associated with arsenical treatment, but great as his services to human nature in this respect, and valuable as his contributions to medicine on that subject have been, to the mind of the present writer they are not to be compared with his observations on the principles on which mercury should be given in syphilodermata, though unfortunately his theory of a preventive course is not always successful, any more than other theories or modes of treatment hitherto published on the subject, for they profess to cure the disease when all that is possible is removal of disease manifestations.

If any one states that a primary sore is always followed by secondary symptoms, it may be presumed that he speaks from his own practice, and then you may conclude that either he has had, by a special dispensation of Providence, all the exceptional cases, or that the same influence has not endowed him with sufficient intellect to profit by experience. Again, if a writer states that his cases always get well without salivation, you need scarcely read more; it assumes that he can so govern the range of medicine, that an exact point shall be reached and no farther, a power of prescribing that, even with daily careful watching, is supernatural.

The medicines used for the constitutional treatment of the syphilodermata are preparations of mercury, iodine, iron, gold, and platina.

The action of the above remedies must be considered as they are given primarily, repeated, conjoined, or in succession.

Mercury absorbed into the system produces much the same effects as arsenic, that is, it reduces the size of the red granules, increases their consistency and number, and quickens the circulation. But to insure these actions, it is necessary that a sufficient quantity should be given, and that quantity so rapidly, that the system does not become gradually accustomed to the mercurial presence, when its irritant and consequently beneficial action ceases. As the action proceeds, the capillaries show signs of the increased current, and round the base of the teeth may be seen a red line, denoting that the irritation has reached the highest point of which it is capable of doing any good. All the glands participate in the general increase of circulating power, and have in addition, the stimulus of excreting the metal, and with this a certain portion of the disease germs is also carried off. The salivary glands are specially demonstrative of mercurial action, and their excessive stimulation, called salivation, is usually taken as a token that the full power of the medicine has been attained. The irritant or beneficial action, once established, is carried on for some time, with gradually decreasing vigour, without any continuation of the medicine; and you have then all the good you can obtain from a mercurial course. You may have accidentally secondary consequences which

you neither desire or expect, such as ulceration of soft parts in the mouth or throat; but if you are careful, you ought never to have the poisonous effects of mercury, with the nervous paralysis and general deterioration of the blood which then ensues. After the mercurial course the system has less of the poison germs, but it has an indefinite quantity of the mercury retained in the blood. Therefore, to a similar administration the system is no longer sensitive, and it requires a vastly increased quantity of the medicine to produce the same effects as before. In time the mercury, like the poison, is eliminated, and then you have the same state as if mercury had not been given. It is in ignorance of these facts that you may read of cases in which it is said mercury is of no avail. The less germs are present, or the weaker their action, the smaller the quantity of mercury necessary for their counteraction. But it is an entirely different state of affairs, if the system has already been acted upon by this drug, and rendered insensible to any moderate quantity of it.

Iodine, whilst producing the same increase of the circulation as mercury, is more feeble in its power. It is more rapid in its action, but more quickly tolerated; being also sooner eliminated, it is comparatively more efficacious when repeated at short intervals.

Iron is useful when the system is anæmic, as counteracting the tendency of the virus to diminish the number of red granules in the blood.

Gold has the same action as mercury, but is not so powerful; and the same may be said of Platina, which has a very uncertain action.

When it is necessary to repeat any of the above, gold and platina are not sufficiently constant to be useful, mercury should be given in at least double doses, or their equivalent; whilst iodine may be increased to an indefinite extent as regards the iodic powers of its preparations.

We are not considering any special idiosyncrasies in the above remarks, one person may be especially sensitive to mercurial, another to iodic remedies. In consumptive patients, the increased action produced by mercury, if there are no other complications, by rendering the lungs sensitive to the presence of tubercle, converts a passive into an active disease, and hastens an active case to its fatal termination.

Mercury and iodine are given together, simply combined as iodides of mercury, in which the iodine is an unappreciable item, the base being the active principle; but if in some other ways, we have the advantage of producing an irritant action with a less expenditure of mercury; the disadvantages of not knowing to which we are indebted, not for the benefit, but for sundry complications that may arise, and also that we have used two remedies, one of which in succession to the other is very valuable, and you will generally find that the advantage is not equal to the objections.

Iodine and iron is a very valuable combination, especially in sanguine temperaments, and the iodic action is readily obtained; with these mercury may be combined, if thought advisable.

Gold is not given in composition with any other of these medicines, it is valuable in succession to mercury; for gold or iodine following mercury, by causing a fresh irritant action, facilitate and hasten the elimination of all extraneous substances that are removed by the excretory organs.

Arsenic is not available in syphiloderma usually, though, like many other tonics, when the disease is very slightly visible it may be of service. But for all cases, it is of so poisonous a nature, that its administration has to be very cautiously watched, and consequently very gradual; whereas what we want is a vigorous shock; an overdose of arsenic means death, an overdose of mercury excessive salivation only.

The action of all mercurial compounds given by the mouth is somewhat similar; they are, if insoluble, rendered to some extent soluble by the gastric secretions; passing into the intestines a portion is absorbed, but the great bulk of all insoluble compounds passes away with the evacuations. If the preparation is soluble, a larger quantity is absorbed, but the irritant action on the surface of the alimentary canal is greater than with insoluble salts. As a consequence of the local irritant action of mercurial compounds, all the intestinal glands are directly

stimulated, the blood is drawn to the intestinal surface where exudation takes place, and the liver secretes an extra quantity of bile from the increased rapidity of the circulation through its capillaries.

The general irritant action of mercury produces a quickened circulation through all the vascular system, glandular or otherwise; the red granules increase in number, diminish in size, and are rendered firm and tough; the white corpuscles diminish in size and in number, any stagnant spots being removed; the glands, increased in activity, eliminate the metal and throw out more aqueous matter with their special secretion, and some of the disease germs escape with the secretions, whilst the further multiplication of such germs is arrested, if only for a time.

You see, therefore, that the action of mercury produces effects exactly opposite to those resulting from syphilitic germs, but that it is necessary for it to do so that it should be given in proper quantities, and with sufficient rapidity, its definite result being entirely tonic.

The first symptoms of mercury administered in medicinal doses are seen in the vascular system. These symptoms continuing, there is inflammation, resulting from too great action, which is first visible in the gums as a red line around the teeth. The stimulation of the salivary glands is easily noticeable, from the fact that there the secretion is intermittent in health, and is not poured into a receptacle, where

an increased flow may be received, and be comparatively unnoticed ; the salivary action is also more continuous than the other glandular secretions under mercurial influence. Other metals, such as iodine, gold, and platinum, which have been recommended for venereal disease, also produce salivation, and are useful in all respects, as they resemble in the effects they produce the changes consequent on mercurial action. You will see that these changes are in every particular exactly opposite to those produced by syphilitic germs ; and as in a body as yet free from the presence of mercury this metal's influence is far more powerful, though transitory, than the influence of the poison germ, it always causes rapid disappearance of the germinal disease. Now, there is nothing in the above which attributes any antidotal power to mercury, in the sense in which the word antidote is generally used ; but the power of mercury has no greater effects than have been stated. There is, therefore, no real necessity absolutely for mercurial treatment in secondary syphilis ; if we could obtain the same results by any other remedy, that other remedy would answer equally as well.

It is not in the province of these letters to notice any other cases for which mercury is used than those affecting the skin ;¹ but in every case in which the action called salivation or special action of mercury is produced, the mode in which mercury acts and the reasons why it acts are identical with what has been stated in the foregoing remarks.

The syphilitic germ produces stagnation, stagnation causes increase of formative germs, increase of formative germs causes the syphilodermata; mercury removes the stagnation, the syphilodermata disappear, and germinal growth is arrested. If you had studied twenty years ago, you might have been taught that mercury combined with the disease, and that iodide of potassium removed both disease and mercury.

When the full mercurial action is obtained, which may be seen either by disappearance of the disease action or by salivation, you stop the mercury; if then at some other time, sooner or later, the disease reappears, you have the second stage of treatment, that in which, with a somewhat weakened disease, it becomes necessary to determine if it is preferable to commence at once a mercurial course, or to endeavour to clear the system by diaphoretics, diuretics, etc., of some of the drug already in the system. Your decision in these cases will depend on whether the severity of the symptoms demands immediate relief, or if the case can afford to wait under supervision until you are sure that a more open field for mercurial treatment presents itself.

The elimination of mercury from the system is gradual and variable; a person may have arrived at that degree of saturation when a scruple of calomel twice a day produces little or no effect; after the expiration of a few months, five grains twice a day of the same drug will quickly salivate, and after two years one grain instead of five may be sufficient;

if there are no previous details to guide you except that the gums have once been sore, if you give mercury internally, you may safely commence with ten grains of blue pill twice a day.

If you have a patient so saturated with mercury that no reasonable or even possible dose produces any effect, you can avail yourself of galvanism to remove some of the metal; and in these cases, galvanic baths will soon render the patient amenable to mercurial influence. The success of these baths in so doing, and also in stopping mercurial action, is very marked; the only unsatisfactory part of the process is, that you are not able to detect the mercury in the liquid or on a negative pole. This may be owing to the very small quantity of the metal in the system, to the slow action necessary, and to the large negative surface required. In any case, the elimination of both disease and medicine is in direct proportion to the youth of the patient. The subject of mercurial and other treatment of the syphilo-dermata will be continued in the next letter.

LETTER XII.

Administration of Mercury—General directions—Preparations—
 Uses — Internally — Disadvantages — Externally — Baths —
 Inunction—Fumigation—Internal Remedies—Hypodermic—
 Case—General Treatment—Iodine—Iodide of Potassium—
 Action — Ammonium — Gold — Platina — Common fallacy—
 Estimating a Case—Secondary Rheumatism—Gold—Iodide of
 Iron — Combined Remedies — Blancart's Globules — Iodides
 and Mercury—Conditions of Cure—Local Treatment—Action
 of Acids — Gargles — Hereditary Syphilis — Syphilis and
 Gonorrhœa.

SIR,

If you decide on administering mercury in any form, you must direct the skin to be kept warm, any exposure and fatigue avoided ; plain diet ; if the medicine is given internally, all acid or saline drinks, all fruits and nearly all vegetables given up ; if possible, the patient should remain in bed, and then you will find that warm baths assist in hastening mercurial action. If the patient is very robust, tartar emetic will render less mercury necessary, for the lower the system is the sooner this latter drug takes effect. If mercury is given otherwise than by the mouth, such niceties of diet are unnecessary ; and we will now examine the

advantages and disadvantages of the different ways of bringing the system under mercurial influence.

Blue ointment, blue pill, the chloride, bichloride, iodide, biniodide, cyanide and bicyanide of mercury are the usual preparations or compounds ordered for the above purpose, and they may be used internally, externally, and hypodermically.

Internally the soluble salts are more active than the insoluble compounds; they are also much more irritating to the bowels, are more apt to disarrange the digestion and appetite, and may even cause inflammation of the stomach. The insoluble salts are liable to pass off without doing much more than purge and gripe. The advantages of internal administration are, that it occasions no remark or observation, that the patient can attend to himself, and that the remedy is convenient and portable. The disadvantages are, the uncertainty of action, the purging, and the general disorder of the alimentary canal.

The uncertainty of action varies with the preparation given and the quantity absorbed, which is influenced by a variety of circumstances, notably by the substances with which the medicine comes into contact. Local irritation, and disturbance of the bowels generally, may be held in check by great carefulness of diet; by opiates; tannin alone or in vegetable tinctures; chalk or bismuth; but opium loses its power, and the other remedies either decompose the medicine, or in rendering the action

quiescent also take away all absorption. So that if you have a case in which the bowels are irritable, and you manage to keep them from acting for a few days, when they are opened you have an explosive evacuation which completely empties them.

Externally, mercury is given in baths or pediluvia ; hydrarg. bichlorid two drachms, water sixty gallons ; the time of immersion varies from two to four hours. The great uncertainty, trouble, and tediousness of this method has caused it to be entirely discontinued, and justly so, for sufficiently noticeable to cause great observation besides its other faults, if observation is not an item, there are superior methods at command. The blue ointment rubbed into the skin is an old and favourite remedy, and is still valuable for children. It has the advantage shared by other external remedies of causing no constitutional derangement or distress ; its disadvantages are, that it is excessively dirty, requires an attendant to do it properly, and that it causes inflammation, perhaps pustules, on the skin where the inunction takes place.

The skin and mucous surfaces of the air-passages both absorb mercury when presented in the form of vapour or fumes. Calomel, by its superiority in several respects, is the only compound used, in doses of from one scruple to two drachms. Mr. Henry Lee has given much attention to this mode of administration, and it is to his labours and observation that so admirable a form of administra-

tion has become popular. The apparatus he recommends is easily procured; it consists of a lamp in a cylinder supporting two trays, one containing water the other the calomel; the naked patient being seated on a chair, the lamp is lighted, and then a blanket or mackintosh, fastened round the neck, encloses everything thence to the floor. The water evaporates and the calomel volatilizes, in from fifteen to thirty minutes, and the patient, inhaling once or twice, gradually cools down, covered by the calomel deposited in a very fine state of division. Much of the efficiency of this process depends on the inhalation; the amount of perspiration, going immediately to bed, or dressing, are items also affecting the result in a lesser degree. The advantages of these baths are very great; they are simple, rapid and effectual, very rarely producing salivation, and never producing internal irritation or derangement. The only objection to calomel fumigations is the dislike patients have to the length of the process, and to seeing the paraphernalia about their room.

Internally, the biniodide is the most powerful and irritating compound of mercury in use; its dose is $\frac{1}{16}$ to $\frac{1}{8}$ grain; the iodide stands next, the dose being about double; it is very useful, and may be necessary in cases which have had repeated courses of mercurials, for no compound of mercury has any special property as regards any peculiar eruption; calomel is more powerful than blue pill, the latter at even

weights only having half the effect of the former ; you can do a great deal with these two, and if you have the case from the beginning, will probably never want any other remedy. Hydrarg. c. cret. is an infant's purge, not a syphilitic form. Blue ointment with soap, as a pill, is remarkable for being tolerated, if taken on an empty stomach, when no other mercurial preparation internally is tolerated ; it excites less irritation and purging than any other at present known. The bichloride, cyanide and bicyanide have the same action ; being soluble they can be given in the form of mixtures ; the dose of the former begins at $\frac{1}{8}$ grain, of the two latter at $\frac{1}{12}$ grain. The cyanides are particularly nauseous and disagreeable, both in mixture and pills. The three latter compounds may also be used hypodermically ; the dose being $\frac{1}{84}$ grain of the bichloride, $\frac{1}{84}$ grain of the cyanide, at the commencement. The former occasions abscesses frequently, the latter sometimes ; an effect always produced by calomel suspended in mucilage, when injected, which has caused the use of the latter to be abandoned. The danger of purulent formations, which are accompanied by sloughing of the skin and subcutaneous tissue, is lessened if the strength of the solutions is decreased ; if possible, one of the above doses, in two or three minims of water, should be injected at two or three separate times each day, which involves much trouble to the patient, for as the best spot is in the loose

skin of the back, unless he is in bed, it entails undressing every time. Patients also don't like even so small an operation, for, however fine the needle-jet may be made consistent with the strength necessary for perforation,—and there has been some improvement lately made in these needles,—it yet requires more power to penetrate through the skin than you would at first imagine.

Suppuration is more likely to happen amongst those who labour than in the quiescent, and blows or contusions, considered of everyday occurrence, and not worth noticing, are sufficient to excite this objectionable action where mercury has been used hypodermically. When, however, such a complication does not arise, there is no more beautiful or successful remedy in medicine. It causes the disappearance of the syphilodermata in a marvellous manner, without any other apparent change.

The following case will illustrate both the risk and the success of this plan of treatment.

A gentleman had ulceration of the mouth, tongue, and tonsils, scaly formations on the arms, four large tubercles around the anus, with eight smaller ones near that orifice; there was also a large sore on the scrotum, and two indurated cicatrices. He had previously taken mercury. These eruptions and formations were completely gone (except the temporary stains), under the iodide of mercury internally, in a month.

Seven months afterwards he came again, in

very reduced circumstances, with a gyrate scaly eruption on the forearms, and scales on the palmar and plantar surfaces, with great derangement of the stomach. He requested that, if possible, any hypodermic injection should not render it necessary for him to undress, ashamed probably of his wardrobe, so $\frac{1}{32}$ grain of bichloride was injected daily under the skin of the arm. On the fourth day the eruption was better; on the sixth, the improvement was so great that the further necessity of continuing the treatment was doubtful. This question was, however, solved in an unpleasant manner, for on that day, whilst working about the docks, the skin over the knuckle of the middle finger was crushed off, and the nail on the same finger torn off; this on the hand of the same side as the last injection. On the seventh day he came with the finger much inflamed, and the lymphatics distinctly running up as red lines the back of the hand and arm. There was also a faint blush and some tenderness where the last injection had taken place. In spite of every effort, a considerable abscess formed, which left a cicatrix the size of a sixpence. But though he took no more mercury, the syphilitic symptoms gradually vanished, and from that time for two years certainly the disease never reappeared.

You will notice the minute quantity of mercury here used, and though the case was not fortunate in its progress, yet the result was very satisfactory.

The cyanide used hypodermically is not quite so effectual as the bichloride. It occasions considerable smarting for half an hour after its injection, and slight tenderness for a day or two. A patient cannot very well use hypodermic measures himself, for it is with difficulty done on the left arm; and unless the patient reposes the lower extremities are objectionable, as risking inflammation. In the general treatment of syphilis, you have not only to consider what is best to be done, but also what your patient can do. If he can come once or twice a day, and does not object to a little pain, the hypodermic use of mercury can be very successfully adopted. If he prefers the trouble of calomel baths, there is that method; and if dirt is not an object, if he has attendance suitable, the blue ointment is at hand. In any case, if possible, the external treatment is the best, but in the vast majority of cases you will find that the internal method has to be followed.

If you give mercury by the mouth, the dose at first is of blue pill five grains night and morning; of the chloride two or three grains, three times a day. It may be necessary to combine either of these with a bitter or mild tonic, or opium $\frac{1}{4}$ grain. You can increase the quantity and frequency of the dose of the insoluble preparations to a great extent, but the soluble salts are dangerous from their local action.

Iodine is always used in composition in medicine, and the compounds available are the iodide of potassium, of ammonium, and of iron.

Iodide of potassium has been strongly recommended in secondary eruptions, and virtues have been attributed to it far in excess of its real powers. Consisting of two separate metals, the salt possesses the influence of each, and also some other, possibly of the special combination. Like all compounds of iodine, it stimulates the glandular system, acting in a marked manner on the mucous membranes of the nose, and causing great action of the salivary glands. It shares with the potash salts their diluent and diuretic action, reducing the quantity of the aqueous constituents in the blood, and also the quantity of fibrine. As a compound preparation, its action is very uncertain; on some persons very powerful, a small dose causing great salivation and tenderness, and aching in the gums and teeth, profuse discharge from the nose, dryness in the throat, great nausea, sickness, loss of appetite, colic very severely unless the diet is carefully regulated, purging, and increased flow of urine. Without any special taste, the stomach at last absolutely rebels against this medicine; as secondary effects, there are great depression, swimming and confusion in the head, loss of all taste, and general debility.

Many of the principal objections frequently soon disappear, and then we may continue the use of this medicine for a long time if the stomach assents.

Among the first symptoms of the administration of this drug are sundry eruptions of a papular or pustular form, even simulating acne, if the

sebaceous glands are involved. These are caused by the irritating action of the iodine, with the lower consistency of the blood produced by the potash, and though the eruption is often viewed with satisfaction by the patient, as evincing the exodus of the disease, yet whilst it lasts the medicine does no good in an anti-syphilitic sense.

The irritating action of iodine, notwithstanding the evidences of increased secretion, is very weak, and quite unequal to meet the action of the syphilitic germ at first, whether combined with potash or ammonium, or with iron. The iodide of ammonium shows nothing but the iodic action, which is more powerful in equal doses than the potash salt.

The iodide of iron has both iodic and chalybeate properties, weakly the first, strongly the latter. As an adjunct to other treatment, it is valuable ; alone, it does no more good than any of the other salts of iron.

Gold and platina are never used primarily, and with these metals we come to the second branch of treatment, which is that more generally required—to cure the syphilodermata when the system has been previously subjected to the action of mercurial remedies ; for as gold and platina are not used generally, and as iodine has only a transitory influence, we have only now to consider what is necessary when mercury has become inert.

It is extraordinary that there should be an

opinion often stated that, whilst mercury cures or relieves syphilis in all forms when the virulence of the disease is greatest, yet when the disease has somewhat subsided, when its action is less hostile, that then mercury is of no avail. The facts being exactly contrary; for if a system as yet untouched by mercury but afflicted with syphilis is exposed to the action of that metal, the less the disease the easier it is cured. But it is entirely different when the system has become insensible to mercurial action from repeated doses; in fact, mercury may be so gradually given as to produce no effect on the vascular system, and the first signs of its presence are then seen in nervous paralysis.

If a case of syphiloderma presents itself in which mercury has been previously given, it becomes necessary to estimate, from the time elapsed, from the effects previously produced, from the urgency of the case, and from any symptoms possibly present, to what extent the mercurial influence is existing, and then to judge if it is better to repeat the mercury in largely increased doses, or endeavour to procure its elimination by other remedies as a preliminary to mercurial treatment. If you decide on repeating the mercury, you can do so in the methods already stated; if not, the other drugs named are available. The preparations of iodine, of gold and platina, all act not only as irritants, but when given in succession to mercury promote its elimination by the glandular system.

Iodide of potassium, in addition, strongly excites the renal secretion, and, by diminishing the amount of fibrine in the blood, lessens the tendency to rheumatic inflammation. If given simply as a sequel to mercury for this latter effect, a short course is all that is necessary; but if you have any hopes that of itself the iodide will counteract the disease, it requires many months of steady administration, and a very feeble action of the disease to be removed. To prevent the depression caused by this salt, and its griping and purging qualities, it is better to combine it with sal volatile, thirty minims of the latter with five grains of the salt, night and morning, in water. There is no objection to, though very little benefit from, sudorifics, such as sarsaparilla and guaiacum, combined with the above-named form. Iodide of ammonium has the same effects as the iodide of potassium, minus the saline and diuretic action, and is altogether inferior alone to the latter iodide.

Platina, in all its preparations, is very uncertain, but gold is more useful. This latter metal is so little used, and its effects so little studied, that the time of its elimination is not satisfactorily observed. The soluble forms of its salts are very irritating to the stomach, whether combined with an alkali or not. If it is absolutely necessary that a medicine should be administered that will produce effects similar to mercurial salivation, you can obtain these effects, and very satisfactory results,

from the teroxide of gold in one-tenth grain doses, three times a day.

Iodide of iron is seldom given as a secondary medicine alone, unless there is some demand for a chalybeate remedy ; but in combination it is useful.

We will now proceed to notice the combinations which the syphilodermata sometimes require, either as primary or secondary remedies.

The combinations of use are those in which mercury is administered externally with iodine internally, or in which these two medicines are given together.

Mercury in vapour, rubbed in, or hypodermically, may be joined with iodide of potassium, of ammonium, or of iron, given internally. When the patient is anæmic or scrofulous, inunction of the blue ointment, with the syrup of iodide of iron internally, is a very useful plan of treatment, especially when there has been previous mercurial action. Iodide of iron may also be given in the form called "Blancart's globules," which are coated and tasteless. Iodide of potassium may also be added to the iron if there are any rheumatic symptoms. The potash salt may also be used alone internally with mercury externally, in which case it renders less mercury necessary to cause disappearance of an eruption. When given combined internally as the iodide of potassium and bichloride of mercury mixture, it is equivalent to giving a small dose of the iodide of mercury, with the potash

salt in addition. The advantage of this combination is the small quantity of mercury used; the disadvantages are that it has all the objectionable features of both medicines used internally; if it disagrees with a patient, you cannot tell which medicine is obnoxious, nor can you estimate the quantity of mercury retained; and the combination is generally wanting in power.

Iodide of ammonium, given internally in combination, is exactly similar in its effects to the iodide of potassium, except that it has no saline action.

None of these combinations are to be chosen as a primary treatment of secondary syphilis, and only in succession to other remedies, when there is some complication influencing your treatment. We have yet to notice external applications and infantile syphilis; before doing so, we may remark that the treatment of the syphilodermata generally is a subject of great interest, for they are all curable, though very obstinate; difficult to remove if the patient is elderly, poor, attenuated or half starved; they readily yield to appropriate remedies if the patient is willing and able to do what is best for the case; and this result may be obtained in spite of previous mismanagement, which is generally the greatest obstacle to a cure.

Local treatment of the syphilodermata is a very secondary matter; if there are tubercles which will bear friction, rubbing-in the dilute citrine ointment will hasten their disappearance; if protection from

the air is desirable, any ointment containing carbolic acid is useful.

For ulcers, the old black wash at first, and then carbolic acid, as a lotion or in an unguent. The theory of implantation will be discussed later on. If the ulcers extend over many square inches, you may have to cure them by instalments, giving a mercurial course, then a brisk purge, change of air and iodide of potassium, then a repetition of the mercury. You must remember that if you have given mercury by the mouth with antacids to cause its retention in the system, and give after this mineral acids, the result may be intense salivation, from absorption of particles of the metal lying inert in the folds of alimentary mucous membranes. For ulcerations, eruptions, or fissures on the mucous surfaces the following are used: chlorine gargles, either as chloride of soda or as hydrochloric acid, the latter with bichloride of mercury if desirable; but the best of all is carbolic acid as a caustic or as a wash.

As regards inherited syphilis, the treatment may now be pointed out. If the mother is diseased as well as the child, it is useless to treat one without the other, and it is advisable to treat both, unless the child is brought up by hand, which is the preferable mode in any such cases. If the mother continues nursing, both she and the child must have mercury, and the child will always be well first, for you may, by inunction, administer to the

infant mercury *ad libitum*. The baby should have equal parts of blue ointment and lard rubbed into the soles of the feet, or, if they are very badly inflamed, every sound spot on the body may be used; the bowels must be soothed with Dover's powder if necessary; or one grain of bichloride of mercury, in four ounces of syrup, may be given in doses of a teaspoonful three or four times a day. In very bad cases, both outward and inward medicines may be used, and you may feel perfectly certain that the mercurial action will be first shown in ameliorating the disease. The maternal treatment will have to be carried on according to the principles previously mentioned. If there is much soreness in any flexures of the child's limbs, if there are any discharging surfaces, whether ulcerated or not, there is no better application than the old fashioned black wash. You should carefully avoid all preparations of iodine; if given to the mother they depress the system, irritate the bowels, and impoverish the milk at a time when everything should be done to render this last of the most nourishing and unirritating character. With the above treatment, children recover wonderfully from these affections; and though the teeth, and possibly some other formations beyond our vision, may always bear traces of the original affection, as far as the skin is concerned their cure may be said to be rapid and perfect, the disease and the remedy both being eliminated from the system.

The influence of vaccination on syphilis will be afterwards mentioned. You may frequently meet with a complication of gonorrhœa and secondary eruption; in this case, the theory is to cure the discharge with injections and the disease by medicine; but, like many other theories, it is often quite impracticable. If there is much pain and irritation of the urethra, you will have to devote all your care to the removal of the discharge before commencing any treatment for the syphilis; and as the administration of remedies for both at the same time is not feasible, the more serious but less painful affection has to take its chance, unless mercury can be given externally. There may also be other ulcerative diseases present with syphilis, in which the double attack on the skin, of constitutional and acquired disease, is most formidable; thus, if a patient with lupus is infected by specific disease, the treatment requisite for the latter is highly injurious to the former. When it is absolutely necessary to give mercury, the shorter and sharper that is done, and with the smallest possible quantity, the less is this injury likely to be.

The next letter will continue the subject of germinal disease in more acute forms than those seen in syphilis.

LETTER XIII.

Acute Germinal Diseases—Effects of Germs—Origins—Common Limits—Retention of Virulence—Divergence of Diseases—Small-pox — Inoculation — Vaccination — Case — Inference — New Diseases — Epidemics — Acclimatization — Transmission — Roseola — Typhosa — Progress of Germinal Growth — Formation of Eruptions—Rubeola—Properties—Symptoms—Varieties — Secondary consequences — Scarlatina — Symptoms — Dangers — Secondary consequences — Varieties — Desquamation.

SIR,

The germinal diseases now to be considered include various continued fevers that give rise to cutaneous manifestations—the Exanthemata, and Erysipelas. These diseases, their appearances, course, complications and treatment are all amply described in many works, general and special, and therefore they will here only be briefly noticed as they afford further examples of the principles already stated.

The principal variations in the cutaneous effects produced by these diseases are those resulting from the greater or lesser amount of irritation excited, and the length of time that is requisite to accustom the system to their presence.

We do not know the origin of a diseased germ ; it is possible that it may arise from some altered condition of a healthy germ ; nor do we know to what extent there is community or variation of origin ; but we do know that any given germ may, under certain conditions, lose original qualities or acquire fresh ones.

There are two points common to all disease germs, one when their irritative principle produces no effect, and the other when the putrefactive principle produces decomposition. These two points are impassable ; in the latter no change of type can take place, in the former there is no disease ; therefore resistance or complete submission to disease germs does not affect the germinal principle.

It is necessary, for the retention of virulence, that a germ should multiply ; if this multiplication takes place in fresh bodies, under circumstances favourable to germinal growth, the germs acquire increased virulence ; if the conditions are reversed, they lose virulence. These conditions may alternate, or there may be so little continuation of one set of conditions as to amount to alternation ; but if the continuation is sufficiently prolonged, the germinal virulence becomes permanently altered for good or bad, and the divergence between the highest and lowest forms is sufficiently great to cause the effects they produce to become separate diseases.

The history of small-pox is a valuable example

of these facts. In former times everybody had an attack of small-pox at some period of their lives. Brought into contact with the variolous germs, those in bad health were at once attacked; and, by continued absorption of the germs, those in good health were reduced to bad health, and then they too succumbed. A consideration of these facts led to the discovery that a person in good health, inoculated with a minimum amount of the germs, those germs being of a mild type, and the body free from previous depression, was less likely to have variola severely than if this person was left to the ordinary chances of acquiring the disease. From the time of this discovery the great mortality of variola was diminished; but a still greater discovery was made; it was found that when the disease germs of variola had been transmitted through a cow, nearly all their putrefactive virulence, nearly all their contagiousness, and a great amount of the irritative principle, were lost, and yet that there was left in the deteriorated germs such a sufficient resemblance to the original germs as to render these latter unable to excite irritation at any future period. What it might have taken centuries of fortuitous conditions to effect when left to human bodies, was effected at once by the body of a cow.

There is no instance recorded of the disease, thus produced by animal interposition, ever returning to the original virulence of small-pox; but a case which occurred at the Dispensary some time

ago shows the possibility of this happening. A child was vaccinated in one spot, this was followed by the appearance of eleven distinct and perfect vaccine pustules distributed over the body, and, in addition to this, the mother and two other children caught the disease, the mother having five vaccine pustules on the abdomen and thighs. Here you see that, under specially favourable circumstances, the vaccine germs had acquired such increase of irritative power as to produce many points of congestion, and also had increased to such an extent that their diffusion with the increased virulence, was sufficient to produce the disease in others who absorbed them. It is not an unreasonable inference to suppose that if this family had been able to transmit the disease to other families having like peculiarities, that in time a contagious vaccine disease might have been permanently established; and even the original virulence of small-pox might be reattained.

There are still three points to be noticed before going into details; the first is, why germinal disease should be so severe when introduced into a new country. When a disease is endemic, there is always a certain number protected by previous attacks, others who are not susceptible to the germinal influence; thus, the number of cases being limited, the germs either becoming latent or being checked in their growth, lose their virulence; there is no such limitation to a foreign germinal influ-

ence, and the germs growing freely acquire with every case fresh virulence.

The latter circumstance applies to the next point, why germinal epidemics are always more severe than isolated cases. But, in addition, an epidemic denotes specially favourable conditions for the dissemination of germs without their losing power, so you have increased quantity and quality.

The third point is the possibility of so gradually accustoming the system to the presence of disease germs, as in time to locate therein sufficient germinal matter to protect the body from being irritated by the sudden absorption of the disease germs in quantity. Whether this is possible or not depends, apparently (for we are very short of facts on the subject), on the quality of any special disease germ; as some irritants never lose the irritant power, so some disease germs possibly never become tolerated to the extent of protection, whilst others may give a qualified immunity.

It cannot be supposed that the syphilitic germ is the only one transmitted to an ovum; and if other germs are so handed to posterity, they may somewhat contribute to render diseases confined to a locality or nation less hostile in successive generations.

The cutaneous symptoms produced by germinal diseases are either the common results of decomposition, or those varying manifestations produced by irritation; and as irritation admits of the most

minute division into degrees, you can trace, with very few broken links, the chain of irritative results, from the mildest rash to the worst cases of small-pox.

When the circulation is quickened from any cause, rashes very commonly occur on the skin ; if these are a little more permanent and general than ordinary erythema, and wanting in the persistency of the more severe erythemata, these rashes are called *Roseola*—this name signifying a rose-coloured eruption, unattended by any constitutional disturbance of importance ; at the most a slight febrile attack, which readily yields to treatment, and afterwards has no appreciable desquamation. That there may not be wanting some confusion, the same name of *roseola* has been applied to the eruptions that accompany continued fever of various types. Thus, under the name of *Roseala Typhosa*, many varied cutaneous appearances are classed. They are simple patches of redness, covering a greater or less extent, similar patches elevated by effusion, or spots of congestion. In all these cases the cutaneous symptoms are quite secondary ; and though some epidemics are remarkable for the amount of accompanying roseolous rashes, the severity of the cases does not appear in any way affected or connected with these visible signs. The only point is, that if the fever is of a very putrefactive tendency, any congestion of the capillaries will show, in the discoloured muddy shade given to the rash, that the blood is disorganised.

When the disease germs of the contagious fevers have been absorbed, they increase imperceptibly for a certain time before showing any signs of their presence. This time, which is very various, is called the period of incubation. At length, they are sufficiently powerful to affect the circulation, and commonly make their presence known by causing what is termed "a chill." This, which is a sensation of cold or shivering, is more or less marked, sometimes being unnoticed, at other times very distinct. From this period, the disease advances in two ways; firstly, the chill being an attempt of the disease germs to arrest the circulation previous to decomposition, this attempt may be more or less successful, and the result is seen in the exanthemata, in imperfect eruptions; in the eruptions being dark, purple or black; the various signs of disorganisation and extravasation of the blood; if the case lasts long enough, in destruction of internal parts usually showing only simple inflammation; and in all cases, whether exanthems or not, in great prostration and absence of reaction.

But if at the time when the chill occurs the disease germs are unable to prolong the stage of which the chill is a preliminary,—if the vascular system is sensible to their presence, and has sufficient nervous force to resist and resent such presence,—we have exactly the opposite condition to the stagnant stage—high fever.

This fever in the exanthemata runs a definite

course, but not necessarily so in other germinal diseases, for as a certain amount of vitality is necessary to produce fever, so a certain amount is necessary to banish the fever. A weak person not only catches a germinal disease more easily, but offers less resistance to such a disease when acquired; and cessation of irritation, or tolerance of germinal presence, presupposes a certain amount of strength, without which fresh germinal growth takes place, and the fever is prolonged indefinitely.

The results of such fevers produce the various eruptions we have now to consider. They depend on the circulation being quickened by disease-germinal irritation, such quickening causing great increase of the white corpuscles, which, obstructing the cutaneous capillaries, cause congestion therein, the amount of such congestion, and the result of such congestion, being determined by the persistency of the irritation, and the force it occasions.

Measles, or Rubeola, is the first, as it is the mildest, of the three exanthems to be described.

The virulence of the disease germs producing the eruptions called measles is not very great, though sufficient in some cases to cause death by decomposition. Generally, the virulence is only strong enough to affect children, an adult, unless very weak, escaping. The general symptoms, course, and results of measles are those produced by slight irritation, parts which habitually secrete

secrete more plentifully, and the congestion of the mucous surfaces is relieved by moist exudation. Thus you have, as first symptoms of measles, sneezing, lachrymation, and cough; sickness from irritation of the stomach, or disturbance of the liver, which is common to all exanthems; the pulse is somewhat over 100; gradually the skin, from the face downwards, becomes spotted with a rose-coloured rash, leaving spaces between the spots, or clusters of spots, free from the eruption. The eruption is not attended by any marked increase of fever, and as soon as it is fully developed the febrile symptoms diminish, three or four days elapse before the eruption makes its appearance, and nearly two days before it covers the body. The clustering of the patches of eruption may cover large spaces of the skin, but there is always a certain amount of surface free, and segmental figures are more or less evident; their appearance and the clustering have been compared to horse-shoes. The redness disappears, and the subsequent desquamation takes place in the same order that the rash has become visible. As the congestion is neither continuous nor very complete, the scales evolved are small and thin, and as the palms of the hands and soles of the feet usually escape the eruption, you have not their thick covering thrown off.

The malignant form of measles, called also *Rubeola Nigra*, is rare, but the varieties in which the disease is milder are numerous, and it is often

very difficult, not only to say that a rash is measles, but to determine if it is caused by any disease germs. Some children have cutaneous eruptions with every febrile disturbance, and if you suggest the probability of the cases in such children terminating as measles, you are met with the declaration that they have already had that disease, and yet, in a few days, or hours, a roseola makes its appearance, having all the characteristics of Rubeola, without the catarrhal symptoms; or you may have all the latter symptoms without the rash; or both rash and catarrh may be so mild as to cause the case to be termed spurious measles. In all these cases it is only the name that presents any importance; the disease is insignificant, and the treatment perfectly simple.

The treatment of the exanthems generally will be noticed afterwards, and then the measures required for the malignant form will be stated; in the other forms very little is necessary for the disease itself, though for the secondary consequences a good deal may be essential.

The general fever may cause suppuration of latent tubercle, may aggravate scrofula, may lead to bronchitis, pneumonia, enteritis, or dysentery; or you may have troublesome diarrhœa, ophthalmia, or excessive salivation.

The latter is more common in the next disease, scarlet fever, or Scarlatina, which is the perfection of an irritant germinal disease, both in the severity

of the symptoms and in the protection it affords against further attacks. The attacks of spurious or modified measles rarely protect against subsequent infection; but one attack of scarlet fever, however mild, is usually a safeguard for the future.

In measles the skin may never be very hot, but in scarlet fever, or scarlatina, the skin burns, all secretions are arrested, the exudation when formed is eminently dry, notwithstanding which you may have a few vesicles on the body. The pulse runs from 120 to 140, and on the second day a red continuous eruption appears on the neck and chest, gradually covering the whole body in less than twenty-four hours. The symptoms antecedent to the rash are sickness, pain in the loins from renal disturbance, white, furred, or brown tongue, and sore throat.

The tongue soon shows red points of congested papillæ, if through a white surface, called a strawberry tongue; and it gradually becomes bright red. The throat may have every shade, from purple to red; may exude on its membrane some fluid which collects as a white covering, may ulcerate and slough, and may cause, secondarily, great swelling of the glands of the neck, an addition to the great difficulty of swallowing, always present.

Excessive salivation is a not unfrequent consequence of scarlatina, œdema of the throat another sequel, and in strumous children troublesome supuration round the glands of the neck often happens.

You do not have in scarlet fever the bleeding from the nose of measles, but in both the exfoliation of the mucous surfaces leaves sore, raw, bleeding spots that a child constantly picks, and sores about the mouth and lips that are an aggravation of the troubles antecedent to recovery.

In scarlet fever, as in measles, the putrefactive element may predominate, but whilst in measles if the irritative stage is reached the only dangers you have to dread are secondary, in scarlet fever children will die either from excessive irritation or from the complete congestion of all surfaces at one and the same time.

The varieties of scarlet fever are the malignant form in which the putrefactive action has free course, and the rash is imperfect, irregular, and a purple colour; a modification of this form, in which the irritation only proceeds sufficiently far to affect the throat, and then the putrefactive influence asserts its power; the ordinary fever more or less severe; the fever which only affects the throat, and that mildly, unaccompanied by any rash or ulterior consequences; and lastly, that form in which, with no rash, the throat being very slightly affected, the kidneys are seriously involved, and may show afterwards that notwithstanding the absence or mildness of the febrile symptoms that they have been disorganised by the result of germinal disease.

There is thus a third danger in scarlet fever.

We have noticed the putrefactive, the irritative, and now we come to the consecutive.

In all fevers in which there is pain in the loins the kidneys are affected, in scarlet fever we have the renal secreting surfaces specially attacked, at the same time the blood is forced into these glands, and the compensating or relieving action of the skin arrested. As a consequence of the state of congestion thus produced, we may have permanent disease or disorganisation of these glands, or more frequently imperfect action for a time more or less prolonged, during which time the aqueous constituents of the blood exude into the areolar tissue, causing general dropsy.

The desquamation in scarlet fever is universal, and perfect when the rash has been very strongly marked, the flow of blood through the capillaries being entirely arrested for however short a time, during that time no epidermic formation takes place, and the continuity which is essential to retention of the epidermis is destroyed, so that when the rash has passed over a part, the external layers of cells constituting the epidermis remain merely mechanically apposed on the true skin. In course of time, they gradually separate in flakes, more or less large, as the epidermis is thick or thin, leaving in some places a tender red surface, the excess of white corpuscles in the capillaries being expended in forming a fresh cuticle. But the impeded capillary circulation may not become

entirely cleared without obstructions, and thus in all eruptive fevers there may be secondary rashes of a papular or pustular form. These rashes are not very important, though they may be somewhat troublesome.

The next Letter will continue the subject of germinal disease.

LETTER XIV.

Variola—Curious definition—Symptoms—Course—Formation of Vesicle—Umbilication—Complications—Subcutaneous Effusion—Varieties—Germinal Growth—Dangers—Sine Variolis—Benign—Modified—Irregular—Second Attacks—Marks—Local Growth—Results—Severity—Number of Pustules—Localisation—Influence of Exanthemata on other Eruptions—Diagnosis—Varicella—Symptoms—Treatment—Distinct Disease—Erysipelas—Characteristics—Growth of Germs—Dangers—Primary—Secondary—Effusion—Properties of Germs—Varieties—Idiopathic—Symptoms—Local Assistance—Difference of Course—Absence of Protective Power—Reasons—Diagnosis—Treatment of Germinal Diseases—Stimulants—Opiates—Complications—Scarlatina—Chlorine Mixture—Dropsy.

SIR,

Variola, or small-pox, has been described in a work on cutaneous diseases as “an inflammation of the tegumentary investment of the body, both cutaneous and mucous, associated with fever of an infectious and contagious kind.” A writer on general medicine would probably reverse this description, otherwise, in variola sine variolis, there might be the associations without the disease; the description is highly dermatological, and is very like a sweep describing a battle as smoke associated with fighting.

Variola has long been considered one of the most fatal of all diseases, which fatality is due to the association of great and persistent putrefactive virulence in the disease germs, with considerable irritant virulence that is a long time in action. The premonitory symptoms are those common to the two acute germinal diseases already described; but there is, in addition, great depression from the excess of putrefactive force. The earliest premonitory symptoms of variola are those of great depression, prostration, lassitude, shivering, dulness of the eyes, absence of cutaneous circulation; these are succeeded by fever of great severity, which often comes on very suddenly. There are in addition to the above symptoms, those others common to all acute eruptive germinal diseases, and which have been before described. The fever is not so acute as in scarlatina, nor are the throat symptoms so prominent, but there is greater sickness, and equal, if not more, pain in the loins. There is also considerable uneasiness in the epigastric region, various other pains of an indefinite character, and coma or convulsions in the young. On the third day of the disease, numerous small points of a red colour make their appearance on the face and head, followed by other similar points over the trunk and extremities; with the appearance of this punctate papular rash the feverish symptoms diminish, the rash becoming universally developed in about twenty-four hours.

During the fourth, fifth and sixth days of the disease these points become papules, and then vesicles on the seventh day; the vesicles begin to be purulent on the eleventh day; and the contents afterwards pus; the fever has reappeared on the seventh day, a halo of inflammation surrounds the pustule on the tenth day, and from the eleventh day the fever begins to permanently subside, and the pustules gradually become desiccated, and fall off as dark brown scabs, if scratched mingled with blood, and, in ordinary cases, four weeks leaves the patient free from all but marks more or less permanent. But instead of the fever declining on the eleventh day, the virulence of the disease germs may not be exhausted, and then there is a state of intermission between hot and cold conditions, as one or other of the germinal actions predominate.

The formation of the papule leading to the variolous pustule is soon seen to be conical, the vesicle gradually swells, and the pustule, at first fully distended, becomes flattened before it dries up.

The papules are either discrete, corymbose, aggregated, or so close that they almost form a uniform rash. When so close together that the exudations of many papules run into one, they are called confluent.

There has been a diversity of opinions and statements made as to the actual formation of the variolous vesicle. Hebra states that if the top of a vesicle were removed, you would see numerous

dissepiments if the vesicle were multilocular; others state that you do so see the vesicular contents. The exudation having little force, at first the epithelial partitions between the capillary follicles are not destroyed, and the vesicle is multilocular; but very soon the cohesion necessary to cause a partition is lost, and then the vesicle is unilocular, containing fluid and detached epithelial scales. To the slowness of the exudation is also due the umbilication of variola, as the fluid does not at first detach those processes of epidermis which descend into the cutaneous ducts; these processes retaining hold whilst the fluid swelling around causes the depression called umbilication.

The above description applies to an ordinary case of small-pox, but there are other conditions attached to it; the eruption may cause pricking pain or itching, the latter at the commencement and termination; the pustules are also accompanied by great subcutaneous effusion and consequent swelling, both of which extend beneath the mucous membranes from denuded spots of their surfaces. Thus, whilst the eyes are closed from swelling of the eyelids, the nose is stopped, the tongue swells, the lips cannot be closed, and there is great difficulty in swallowing and sometimes in breathing, from œdema in the throat. Generally the worst of these symptoms soon subside if the case takes a favourable course; but sleeplessness and delirium are very permanent features in small-pox. You

may also have great salivation, and swelling of the various lymphatic glands. All the above symptoms combined would not constitute a very bad case of small-pox, and yet they are enough to render it horrible to look at; and if there is any purulent discharge, it is very offensive to the nose.

The varieties and dangers of small-pox will be best considered together with the actual cause of the disease.

The disease germs being absorbed make a great effort to decompose the blood in this disease. They are sometimes successful, and then, with an imperfect purple rash, settle the case at once fatally. The whole irritative process is carried on under the influence of the putrefactive or decomposing tendency, and the case is never free from this tendency; thus, after the formation of the papules, the disease germs collect round them, and, being partially withdrawn from the general circulation, the fever abates; but from these papules, as from centres of infection, they are again poured into the vessels, and you have a fresh access of fever. The putrefactive agency is then sometimes seen in the sanguineous contents of the vesicles or hæmorrhage round their base; and even after pustulation, the intermittent fever that may replace the continued fever shows that this agency is still permanent and influential.

Thus patients may die of small-pox at any period of its course from the putrefactive action.

They may also die from its irritative action, exhausted by the contest under unfavourable circumstances ; they may die from the mechanical results of the swelling and œdema that accompany the eruption ; and they may die from effusion into various cavities, or from the inflammations of various organs, that are concomitants of continued fever.

Whilst the above represent the dangers of severe attacks of small-pox, there are other cases in which only a febrile state is caused ; but if the cases are surrounded by small-pox, this state is attributed to the same cause, and it is called *variola sine variolis*, small-pox without the pocks.

Then there are cases in which the disease is of the mildest character, children running about with a considerable number of pustules on them, but without the slightest inconvenience ; cases in which small-pox follows vaccination, and in which the course is mild, but altogether irregular ; and cases in which the disease is a second attack. Hebra states that he has noticed that when any one marked with small-pox has a second attack, it is always fatal. A second attack implies that the patient is in bad health, and that the quantity or virulence of the germs absorbed is sufficient to overwhelm any protective influence of the previous attack for this influence is always only relative ; the marks or scars left by small-pox have only incidental reference to the severity of the disease, they merely imply that the inflammation has

implicated the corium sufficiently to destroy it, these marks generally being seen where the skin is thinnest, or so attached that it does not yield to the exudative pressure. If the inflammation involves a sebaceous gland, you may have equally scars; and if it destroys the glands of the hair or matrices of the nails, there is permanent baldness in the one case, and permanent loss of nail in the other.

But Hebra's statement is by no means either correct or universally received as correct; and if it is not correct, it allows the possibility of variola being propagated under such unfavourable conditions for growth as diffusion of the germs in a form modified by a previous attack, and in time gradually to be reduced to the condition of Varicella or chicken-pox.

It may be as well to remember that the severity of small-pox is always in direct ratio to the number of pustules formed. The primary effect of sensibility to the presence of the disease germs of variola, is to cause such irritation as shall, by increase of the white corpuscles, cause obstruction and consequent points of stagnation in various parts. It has before been pointed out that stagnation, from whatever cause, is favourable to growth of disease germs; therefore, the more numerous the points formed by the irritant action, the more favourable is the case to the growth of the disease germs with their putrefactive action; to this extent both these actions mutually assist one another. We shall later on have another

disease germ to consider, which is much indebted to local stagnation for its increase. Meanwhile you see that, apart from all exemption from mechanical results of numerous pustulation, the actual virulency of the germ is affected by more or less points, where it can collect, increase, and gather fresh strength, and you also see that if you can prevent the irritant action, you destroy to a vast extent the virulence of the disease.

Any local pressure which assists the collection of the white corpuscles determines the locality of variolous pustules. Thus, articles of dress may cause a ridge of these pustules to form, denoting where the points of attachment of these articles have been. Local irritation equally causes formation of pustules, by determining the circulation to a part or parts; the influence of the exanthemata generally on non-contagious exudative or eczematous diseases, is seen in the removal of all those local congestions that increased rapidity of circulation will remove. In small-pox, if these are not removed by the primary febrile action, but instead remain stagnant, on such stagnant localities, there is excessive pustulation, or even abscesses.

The diagnosis of the diseases already mentioned will be gathered from their respective descriptions; the only difficulty presented is to distinguish between the completed papule of measles, and the papule of transition of small-pox. If the depression of small-pox is absent, and the appearance of

the measles very papular, a mistake sometimes occurs ; it can only last for a very short time ; the difference may be imperceptible to the eye, but the papules of small-pox always give a harder sensation to the touch than any papules of measles.

The disease germs of Varicella, or chicken-pox, are very contagious, but not very virulent ; children are the usual patients, and they generally have the disease only once, though it is difficult to estimate the protective power of a very weak disease germ. A short and not very sharp febrile attack of twenty-four hours' duration, is followed by the eruption on various parts of the body of papules, which quickly become vesicles, and these more or less purulent. The eruption takes place in successive crops, each batch lasting, from their commencement to final disappearance, about a week, and then leaving no permanent scar or mark. Varicella varies greatly in severity, but is never of great importance. Adults have occasionally considerable sickness, and much more fever than the slightness of the accompanying eruption would lead you to expect. The treatment of this complaint is simply to see that the bowels are not confined, and then any febrifuge will be sufficient. The principal interest of varicella is to determine whether it has had a variolous, or, with variola, a common origin. At present the two diseases are very distinct ; but the chain of cases which might connect them has no very marked break, if we take modified small-pox as an intermediate.

The disease germs of Erysipelas have some features in common with the germs of the exanthemata, but also many entirely different. The common features are irritation and putrefaction; the special features are absence of protective power against future attacks, the uncertainty of duration of an attack, and the increase locally of the disease germs. The erysipelatous germs are very contagious, and if any special variety is weakly virulent at first, this weakness rapidly disappears with increase of quantity. There is no disease germ which more rapidly profits by favourable circumstances to rise in the virulent scale. In all diseases from germs which increase locally, as distinguished from diffused growth, quantity is an important element of their severity, and in erysipelas this is specially marked.

When the erysipelatous germs are absorbed into the system, or introduced by inoculation, the patient may die without any cutaneous symptoms, from the excessive irritation, excessive putrefaction, or both combined, which the presence of these germs occasions. The result may be equally fatal, though apparently milder when the irritation has lasted a sufficiently long time to produce local congestion, this congestion assuming a dark purple hue, and then the patient sinking under the putrefactive action. The next fatal result is this course spread over a longer time; and then there are such secondary consequences as death from effusion into the submucous

tissues, serous cavities, or from inflammation of the viscera.

When the irritation is not sufficiently powerful to produce fatal results, it does not, as the next degree, produce obstruction entirely of the capillaries, so that the congestion is always relieved by effusion; consequently effusion, either beneath the epidermis or sub-cutaneous, is one of the most constant symptoms that accompanies erysipelas, this effusion, when cutaneous, taking the form of vesicles or bullæ, the fluids becoming at times rapidly purulent. In all cases when the disease terminates in resolution, the congested surface is relieved of the excess of white corpuscles by the evolution of scales.

The irritant action of the erysipelatous germ terminates at some time or another, however indefinite that time may be; if its first hostility and its secondary consequences do not prove fatal; and this irritant action is rarely fatal of itself, but the putrefactive action of the germ is always present, and always ready to increase, and to profit by the exhaustion consequent on the irritation. Bearing these facts in mind, you will see that the depression from putrefactive action is most to be dreaded.

Sloughing of the sub-cutaneous tissues, abscesses, inflammations of the glands or lymphatics, are secondary consequences that complicate erysipelas without much increasing its danger.

Erysipelas may be divided into two varieties, that in which the disease germs form for themselves a local point of growth, and that variety in which there is such a point antecedent to the disease.

In the first case you have fever, shivering, sore throat, great uneasiness or depression, and finally on some spot about the head or face a blush makes its appearance, from which spot the redness gradually spreads in all directions or in one direction, for an indefinite period, the exudation, cutaneous or sub-cutaneous, causing great disfigurement. This blush, and the symptoms previously described, last a certain time, possibly two or three weeks, and then subside.

This blush is the result of the irritant action of the disease germ causing increase of the white corpuscles and obstruction of the capillaries. With the contest that has had this result, the virulence of the germ may be exhausted, vitality may triumph over disease, and there the mischief then ends, though very many of the local congestions called erysipelas are simply erythems, or some form of eczematous exudation.

But when there is some point of stagnation formed by the system as the result of a natural action such as parturition, of a diseased action such as a boil, or of a reparative action as after a surgical operation, the disease germs have a locality favourable to growth already formed for them.

Either as the result of disease or repair, there is already a point of stagnation in existence; to this point the disease germs come, and there they increase. The danger of erysipelas is therefore vastly augmented when its germs are absorbed under such circumstances, without even considering the state of exhaustion, bad health, or weakness which such an antecedent condition implies; and whatever remedies are used, whatever treatment is available, the point from whence the disease spreads must always be an obstacle, sometimes altogether insuperable.

In this variety of erysipelas, the febrile symptoms may follow, instead of preceding, the external manifestation. Instead of the disease germs being diffused, and then collecting, they may increase locally, and then be diffused.

A person who has had an attack of erysipelas is more liable to it than one who has not had it before. There is not only absence of protection, but there is great, possibly increased, susceptibility. This is due either to the great intolerance of the system to the germs, or to the rapid elimination of such germs, or to their great putrefactive influence. In the former case, supposing germs still to be in the system, any increase in their quantity may at once cause disease; in the latter, their total elimination would remove any possible protective power.

There is another view which the complex virulence of erysipelas, and the varied manifestations

which it causes, renders possible, and that is, whether or not the repeated attacks seen in the same person may be due to one infection.

In germinal diseases of great irritant action the irritation is never renewed, but in diseases of stagnant action the stagnation may be only seen at intervals, and without fresh infection cutaneous symptoms of this action come and go. The erysipelatous germ contains so strongly the principles that cause both these actions, that it is possible the germ may become simply latent, and rise into notice at any favourable period subsequent to the first attack.

The difficulty of ascertaining when absorption of these germs takes place renders the above remarks merely matters of conjecture, inferentially arising from a comparison of the erysipelatous germs with other disease germs.

Erysipelas is distinguished from erythema by the fever, swelling, and general disturbance, which are absent in the latter disease. If, however, you should mistake an erythem for erysipelas, no great harm will be done, and you cannot long remain in error; but if you mistake a simple roseola for an eruptive fever, or the reverse, the consequences may be more serious, for you may either cause a school to be closed for a simple febrile derangement, or on the other hand allow a case of scarlet fever to diffuse its germs amongst a number of persons, each of whom may become subsequently centres of infection.

Nothing but experience and observation will enable you to distinguish the cases of difficult diagnosis in the early stage; no descriptions, no enumeration of symptoms, can result in drawing a line, on one side of which you have contagious germinal disease, on the other simple hyperæmia, from the circulation being otherwise rendered more rapid.

It is only necessary here to mention a few of the more salient principles of treatment of the acute germinal diseases. When the putrefactive action is in the ascendant, either at the early or subsequent stages, if the irritant action is wanting, is feeble, or is checked, support and warmth are necessary—brandy, wine, warm baths, beef tea, etc., and the proper medicine is carbonate of ammonia, in full and frequent doses. In such diseases as typhus or erysipelas, where the putrefactive action is always ready to take advantage of any want of strength, you must watch carefully and anticipate such action. Opiates, chloral, and other hypnotics are useful in diminishing sensibility to excessive irritation, especially in children, in whom want of sleep is very fatal. The results of irritation, such as diarrhœa, and the various complications that arise, must be appropriately treated. In all cases, you will, as a first necessity, give a good purge, that the liver may be relieved of any possible obstruction, and that there may be no fœcal accumulations or intestinal irritants to complicate subsequent events.

In scarlet fever, you will order some simple gargle, either of carbolic acid or some compound of chlorine, to cleanse the throat. You will carefully avoid all caustic or other strong applications to the mucous surfaces, as being contrary to every sound principle of medicine.

The chlorine mixture, made with hydrochloric acid and chlorate of potash, is a favourite remedy. It has the disadvantage of stimulating the kidneys and producing irritation of the bladder, and should never be given to children. It is always inferior to chlorine water, very slightly acidulated with vinegar and sweetened, the additions being simply to render it palatable.

You will also, in scarlet fever and measles, direct the body to be oiled, and a warm bath given daily, as soon as the rash has disappeared, the inunction being to prevent diffusion of the scales, the baths to remove them and to restore cutaneous action. If dropsical symptoms appear, purging and diaphoretics, with, possibly, abstraction of blood from the loins, will be necessary, in addition to the bathing.

Before concluding germinal diseases, we have yet to notice the broader outlines of their cure, various hygienic rules, their diffusion, and the subject of vaccination, in its power of communicating disease, and in its practice under legislative enactments. These subjects will require another Letter.

LETTER XV.

Dr. Beale on Expectancy — Carbolic Acid — Stimulants — Sedatives — Aconite — Prussic Acid — Hydrophobia — Case — Heat — Cold — Ventilation — Reabsorption — Isolation — Modes of Diffusion — Public Vaccination — Ignorant Opposition — Not Universal — Consequences of Legislation — Disease following Vaccination — Examination of Cases — Conclusion.

SIR,

The treatment of germinal diseases has hitherto been always expectant or symptomatic, that is to say, the real disease, the germinal growth, has been allowed to proceed unchecked, any complication only being treated.

The discovery and recognition of such disease germs as have been isolated, and the propagation and establishment of germinal diseases, is due to Dr. Lionel Beale. You should carefully study all his works, and you will have equal pleasure and profit in so doing, for it is impossible to overvalue them or praise them too highly.

Dr. Beale calls the expectant treatment "the denial of knowledge, the ignoring of broad facts of observation and experiment," and he suggests the employment of various carbolic compounds to

restrict the growth of the white corpuscles or disease germs, for he does not appear to separate the increase of the corpuscle of health from increase of the disease germ, nor does it seem necessary so to separate them if the views now proposed are correct, for the increase of the healthy corpuscle follows as an absolute consequence on the germinal growth; if you prevent one, you prevent both. But you may fail to perceive any special carbolic action in the cases Dr. Beale adduces, and some of them point to an absolute contradiction of the theory he advances. A case, for instance, is given in which the putrefactive action of scarlatina being apparent (page 315, *Germinal Diseases*), sodium sulpho-carbolate was given, and the rash came out in force, that is to say, the disease germs increased to their full extent, with the irritant action; there was therefore great increase of germinal growth and of white corpuscles, no check on such growth, the carbolic influence being, if anything, stimulant.

Medicinal and alcoholic stimulants antagonize directly the putrefactive action of germinal diseases, in that they combat the stagnative precursory stage. They are used constantly for this purpose, and with fair success. At the commencement they excite irritation, during the progress of the disease they revive irritation, and at the close they support the system against the exhaustion consequent on previous irritation, or against any lingering putrefactive action.

Sedatives, as the opponents of stimulants, ought to be the proper antagonists of the irritant action of germinal diseases, but we know of no medicine that can be used to reduce the circulation without great danger, nor do we know any medicine that can render the system insensible to germinal presence which would answer equally well.

It is probable that, if the patient would run the risk of being poisoned by large doses of prussic acid or aconite, many cases might be arrested at once, and no doubt some killed.

Sedatives are rarely to be depended on for any great certainty of action, owing partly to want of uniformity of preparation, partly to want of equable resistance. Some sedatives are also irritant locally, others diuretic, and none combine a uniform and certain action, increasing in regular and direct proportion to the dose, with freedom from occasioning all secondary results, and such action being of immediate but temporary duration, and never accumulative, never excessive.

In erysipelas, aconite and belladonna have been used with tolerable success, but without any perception of their principles of action, which are sedative, as against the irritant action of the disease germs.

In connection with this subject, though not with the skin, the following case is interesting. It occurred in Liverpool more than thirty years ago. A person treated with prussic acid, in full doses,

until nearly killed by it, recovered from the irritant action of hydrophobia, and the case lived long enough to develop symptoms resembling typhus. Now Hydrophobia may be considered the acme of irritant disease germs, only approached in severity by rare cases of erysipelas or poisoned wounds. In the above case, the sedative prevented the patient dying as usual from the irritant action, and the germinal disease manifested the common compound properties of all such diseases. As Variola passed through a cow becomes Vaccinia, so some form of typhus passed through a dog might become Hydrophobia.

Opiates in erysipelas and puerperal fever, hydrate of chloral in continued fevers, and hypnotics generally, are all valuable remedies, but their effect is not to combat the irritation but to lessen its results. Bromide of potassium has also acquired a reputation far beyond its real merits, and is objectionable on many grounds.

The putrefactive action of disease germs is counteracted by warmth. Cold is therefore the equivalent opponent of irritation; it is also the purest and most unequivocal sedative known. This principle has been feebly grasped at in days gone by, but it has been better appreciated of late years, especially on the Continent, and its application has been carried out with fair success.

The treatment of continued fevers by cold is free from every objection attached to internal

remedies. It is safe and powerful; if not sufficiently the latter in acute disease, it is yet eminently adapted to those cases of typhoid fever which are uncomplicated, and in those of typhus where the irritant action predominates. In these cases, you have time to check germinal growth, and such growth once arrested never reacquires the virulence it loses by a check. There may be slight exacerbations, but they are like accidental waves of an ebbing tide. The gain is immense if you can diminish the duration of continued fevers by a few days, and cold does this most certainly.

In the application of heat, the whole cutaneous surface can be utilized. The warmth brings the blood to the surface, and returns it warmed to the interior of the body. In the application of cold this is not possible; the surface would be deprived of all circulation, and the case rendered worse than before. But you can apply ice to the axillæ and groins, and so cool the blood passing along the large vessels in those localities, even if it is necessary to keep the general surface and the extremities warmed to promote circulation of the then cooled blood.

It is possible that in time this may become the universally recognized plan of treatment. If the principles now stated are correct, the application of cold is perfect in theory; if they are not correct, it is still the best in practice.

Proper ventilation is an important point in the

treatment of all acute germinal diseases; with a current of air all the exhaled germs pass away, lessening the danger of reabsorption and of communication.

Reabsorption may not do any positive harm in those diseases where the irritant principle prevails; but it cannot do any good. In putrefactive diseases it is very deleterious; and in those diseases associated with local growth reabsorption is most deadly.

Perfect ventilation can only be obtained by a good fire, winter or summer, and a moderate sized room; with these conditions the temperature can be kept at a proper temperature, neither cold nor hot, and without draughts. The room should be devoid of every article but those absolutely necessary, with an iron bedstead free from all trimmings or curtains, especially such abominations as screens.

With perfect isolation, a disease, such as scarlet fever, would be limited to one case; but such isolation never is perfect. To lessen the danger of the disease spreading, the room should be kept impregnated with carbolic acid vapour; all clothes placed in water before removal, and the water also carbolised; all toys, books, newspapers, and similar perishable articles, should be burnt in the room, and, after the case is over, the room should be fumigated, and woollen articles stoved. With these precautions, and every other adjunct that a practitioner can suggest, or parental anxiety carry out, a

house cannot be *perfectly* safe from reappearance of the disease until three months have elapsed from the time of the case getting well.

Some germinal diseases appear to establish themselves more easily when absorbed by the gastro-enteric mucous surface; others pass freely into the system by the pulmonary surfaces. Of the more common modes of communication are public conveyances, domestics, and water impregnated with sewage.

You may occasionally see children amusing themselves by removing the desquamation of scarlet fever in a crowded omnibus or on a ferry boat; and to nurse a sister's child with scarlet fever, and return to her master's house reeking with infection, is the occupation natural to the domestic mind on a Sunday out. These are forms of communication that affect individuals, against which there is no legislative interference. Nor is there any restriction against lying-in cases and erysipelas being attended at the same time, which is just as bad. When a water supply is polluted, the evil is more diffused; and, after much mischief is done, a recurrence from the same cause is often prevented.

The legislature has decreed that all children must be vaccinated, and there are now public vaccinators for that purpose. This is not carried out as it ought to be, from the ignorance of some obstinate individuals, and the difficulties attached to a floating population. The collapse of the Anti-vaccination

Society allows more freedom of discussion than would otherwise be advisable on this subject. Compulsion on any subject is always abhorrent to the popular intellect; and when the poor notice that nearly all infantile diseases arise after vaccination, they attribute to that, the evils that follow. During a late epidemic, many adults were vaccinated, and some can therefore better appreciate the disagreeable sensations it causes. In the poor, dirt, neglect, and careless vaccination often lead to sores and ulcerations that would surprise many who are only accustomed to the best treatment, and all this is in addition to the febrile concomitants of the inoculation.

If the Government wish to have every one vaccinated, the proper way would be to allow every medical charity to keep a registry, and have a public vaccinating time for the poor; these would soon find out where they received most attention, and whence the best results followed, and all would benefit by the competition. We are not likely to have, under existing regulations, a repetition of the "travelling boy," who was vaccinated in every house in the same court; but a curious result of the Public Vaccination Act may be mentioned.

In a large provincial town, a lying-in charity had for half a century made vaccination of the child an indispensable condition for receiving future assistance; and this charity was celebrated for the excellence of its vaccine, and the courtesy with which it was distributed to the profession. One of

the officials became a public vaccinator, and on his pointing out the number of half-crowns lost to the profession by doing gratuitously what the country would pay for, the vaccinating came to an abrupt termination.

For many years every one in large practice must have met with cases in which he has suspected that syphilis has been communicated by vaccination; the vehemence with which this has been declared impossible, the persistence with which such possibility has been denied by those who ought to have known the question fully, have really been the chief obstacles to any one stating such a communication of syphilis as a fact. The advocates of vaccination, if any advocacy is necessary, have not admitted a single objection to the process, and consequently at present the flaw may be magnified, for it is well established that very rarely syphilis has been transmitted with vaccine matter. These cases are so very exceptional, that they are not worth considering as an obstacle to vaccination, but they nevertheless occur; and now that public vaccination renders parental history less likely to be known, such cases of syphilization will become more frequent.

To understand why such cases are not more common, you have but to apply the principles of germinal growth to syphilis and vaccine. A child is born containing syphilitic germs, but as these germs cannot reduce sufficiently the rapid circulation of early life so as to produce any local stagna-

tion, the child is free from any outward sign of the presence of these germs, and the germs not growing are in a reduced state of virulency; this child is vaccinated, an irritant germinal disease is caused, which is still more hostile to the syphilitic germ; from this child another is vaccinated, and though most surely any germinal diseases present in the first child are transmitted to the second, yet the syphilitic germ, already doubly controlled, has again the adverse conditions repeated. It is not that the germ of syphilis is not transmitted, but that the conditions under which such transmission occurs prevent its growth; in fact it is extraordinary that it should ever show any signs of its presence, for the proper treatment of mild hereditary syphilis is vaccination.

If you have but a slight manifestation of this disease in an infant, vaccination causes the syphilitic rash to disappear before the vaccine vesicle is fully formed, and though you may afterwards have a roseola, that rash has no syphilitic signs. It is probable that to vaccination the curiosity of hereditary syphilis passing over a child may be due.

You are more likely to have syphilis from vaccination in an adult, who has been previously vaccinated, than in an infant, for in an adult the circulation may have become sluggish, and the vaccine may have lost its irritant power owing to previous inoculation. The nature of syphilis ren-

dering any exceptional means of infection always a matter of suspicion, causes some difficulty in establishing correct facts on this subject.

These observations conclude the subject of germinal diseases. Some points are omitted as being more fully discussed in works on general medicine, other points have received more notice as they are matters either in dispute, or necessary to understand the cutaneous diseases with which they are associated. If you do not believe in disease germs, you can replace this term by "virus," or "poison." The principles will still hold good, but the evidences already on record as to the existence and multiplication of these germs, ought to be sufficient.

LETTER XVI.

Lupus — Exedens — Description — Non-Exedens — Description — Facial — Extremities — Scrofulodermata — Description — Cicatrices — Lupus Erythematosus — Varieties — Keloid — Diagnosis of Lupoid Diseases — Changes occasioning Lupus — Termination — Treatment — Local — General — Keloid — Action of Cold.

SIR,

The diseases of the skin known under the general name of Lupus are common to all ages and both sexes. The first to be described is called Lupus Exedens.

Lupus exedens commences as a red spot, usually on the face, near or inside the nose. After some little time, an adhering scale is formed on the surface of this spot, and if removed by scratching there is seen an ulcerating surface with a rounded boundary, as opposed to the sharply cut edge of a syphilitic sore. If the disease is unchecked, this ulceration gradually extends, either superficially, destroying the skin alone, or both laterally and deeply, excavating a large ulcer, and destroying in its progress every variety of tissue. When only extending superficially, the course taken by the disease may be serpiginous, though serpiginous ulcerations are nearly always syphilitic. The ulcer-

ative processes of lupus are remarkably chronic; scabs are constantly forming, and beneath these scabs attempts at repair are seen in fungoid-looking growths, which cause elevations and corresponding depressions in the general aspect of the ulcer. This variety of lupus is very rare in early life, is more common towards puberty, and is frequently seen in the aged.

The next variety, *Lupus non-exedens*, is free from ulceration, and more chronic in its progress. It presents a greater variety of appearances, and terminates in destruction of the skin, but often replaces this covering by white fibrous tissue.

This variety, also, is usually seen first on the face. It begins as a congestion of the surface, of more or less extent and activity. The congestion may take the form of a papule, slightly acuminate, or be rounded and tubercular. From the first point of congestion the disease may extend continuously, or it may increase by multiplication of such points and their gradual association.

As this extension goes on, there may be excessive epidermic formation, as seen in exfoliation of scales, large or small. This is usual on the face, and on the face the epidermis is raised by exudation, giving a translucent appearance to the disease, whilst from the imperfect distension of the surface the edges are puckered and indented, where the diseased joins the sound skin. When on other parts, the exudation may escape, carrying with it the excess

of corpuscles, which would otherwise form epidermic scales, and then there is seen a red surface, on which are scales and nodules of a yellowish colour, closely adherent, whilst between these nodules there is a slight moist discharge. This rarely occurs on the face. After a long period, some part of the diseased surface becomes smooth, rounded, and of a pink colour, the colour gradually fades, until a white elevated band, imperfectly defined, is seen replacing the skin. These changes happen generally on the face, for there is little or no such tendency elsewhere. By the contraction of this white band, the various muscles attached to the skin are affected, and the distortion, which is bad enough with the previous inflammation, now assumes hideous proportions, leading to secondary consequences that render life a burden.

Between these two varieties of lupus comes scrofulous disease of the skin. This may be ulcerative, involving the epidermis; may be sub-epidermic effusion, or even for a long period subcutaneous; the epidermis may be washed off and the surface present a collection of nodules, sanguineous or purulent, with more or less exudation; the scrofulous disease may resemble ordinary non-ulcerative lupus; or it may produce hypertrophies, such excessive growths being either fungoid devoid of cuticle, or papillary with excess of cuticle. In the former the aspect is that of soft granulations, in the latter there is hardness and a warty appearance.

In fact, these lupoid growths may at first easily be mistaken for warts. There may be one or several tubercles, and these may have processes or roots extending from them. In a child the origin from a simple tubercle may be recollected, and some domestic remedies may have been applied to cure it. These papillary hypertrophies are often raised by exudation under them, which thus renders the disease very distinct.

The scars remaining after scrofulous disease of the skin are often marked by various excrescences, sessile or pedunculated. Bands of tissue also occur, producing little pockets on the surface.

Lupus may have no tendency either to ulceration or moist exudation. The result of the congestion is then exfoliation, and the variety is called erythematous.

In one sub-variety of Lupus Erythematosus, a distinctly circumscribed spot of redness on the face, after remaining unchanged for years, gradually disappears, leaving a soft white depression to mark its destructive result.

The other sub-variety begins as a blush, more or less diffused, at times almost disappearing, at other times extending over a considerable surface, and accompanied by some swelling. After this has lasted for an indefinite period, a tract is seen, from whence the redness never entirely disappears, and this tract is slightly sunk beneath the level of the

rest of the skin, and from the surface of this tract small furfuraceous scales are slowly thrown off.

The white fibrous tissue which constitutes the termination of non-ulcerative lupus may also form without visible precursory inflammation, or this inflammation may be confined to the formation itself; that is, you may have white hypertrophies formed from the vascular layer of the skin, their growth as a tubercle, a band, or a tubercle with ramifications called processes, only being seen of this colour; or they may be formed of a pale red colour, gradually fading to white; or white streaked with enlarged capillary vessels. This disease is called Keloid.

The pain of lupoid diseases is very variable, generally only a slight burning sensation; but if the disease attacks parts in motion, or if it causes secondary mechanical results, this pain may augment to an indefinite extent.

For the diagnosis of lupus: scrofula is generally obvious in the glandular system—the ulcerating variety is distinguished in its early stages from syphilis by its history and its rounded boundary; the non-ulcerating, by the absence of exudation and slowness of progress from eczema. The presence of enlarged capillaries has been given as a diagnostic sign of lupus, but these are equally common in syphilitic hypertrophies.

The changes that occasion the above diseases

are obvious ; you see first of all stagnation in a spot or spots : this denotes increased number of white corpuscles in such localities. In the worst form we have either the white corpuscles incapable of forming tissue from the fluid in which they circulate, or the fluid is not capable of being formed into tissue ; both these conditions may be, probably are, combined, but one or other or both must exist. Death of the corpuscles takes place, part of the fluid is exuded, part absorbed, tissue already formed is not renewed, but dies, and is also absorbed or thrown off. In a little less severe cases, attempts are made at forming tissue, and this is seen in feeble granulations. But the white corpuscles may not entirely die, they may be capable of forming epidermis, and this epidermis may be formed thicker than is natural, and the local hyperæmia may cause papillary growth, such growth being imperfect, but covered with thickened epidermis ; or the excess of epidermic formation may exfoliate in scales, more or less large, and more or less quickly, and the excess of epidermis may lie either on the skin directly, or be raised from the vascular layer of the skin by exudation of the watery constituents of the blood.

Whilst this exudation and elevation may be on one part of the body, on another the exudation, carrying with it the excess of white corpuscles, may wash away and not reform the epidermis ; this exudation then forming adherent crusts, either of a red or yellow tinge, accordingly as more or less of

red granules or pus globules enter into their composition.

The excess of white corpuscles may also proceed to form granulations at once, the epidermis being imperfectly formed on such growths; or they may form soft hypertrophies with the epidermic covering usual on the skin.

The spot, with its increased number of white corpuscles, may have no action manifested, but may gradually perish, being removed by absorption, leaving the epidermis intact. Hebra states that this form of *Lupus Erythematosus* is caused by excessive sebaceous secretion; but this excess is a consequence of the local hyperæmia, not a cause.

The termination of all these actions is destruction of the skin and subcutaneous tissues, entirely in the worst cases, and of the skin only in others, the skin in some forms being replaced by white fibrous tissue of the lowest vitality. This white tissue may form without any previous apparent hyperæmia; its first appearance may be devoid of any redness, and it may either appear on a cicatrix or on the sound skin; in the former case it is known by the name of spurious keloid.

The treatment of all Lupoid diseases is local and constitutional; as they are all constitutional affections, any local treatment is only secondary and adjuvant to general remedies.

In ulcerating lupus, all you can do locally is to soothe or protect; the former object being attained

if possible by opiate applications, and the latter by ointments to exclude the air, by collodion for the same purpose, or by such caustic applications as shall form with the exudation an eschar.

In non-ulcerating Lupus, you may destroy the skin or hypertrophies by heat or caustics; such as the acid nitrate of mercury, potassa fusa, or chloride of zinc, and may hope to have a simple scar instead of an hypertrophied cicatrix. If the disease would destroy an inch in two years, and you destroy two inches, for some time after the operation you may expect the case to be considered cured; but if you see many of these cases, you will scarcely meet with one in which such a cure, as shown by the cicatrices, has not been produced.

When you have a case from the commencement, and you destroy the skin, its inflamed or hypertrophied surface, the eschar may come away, and the wound heal up; but this does not always happen, even at the earliest stage and with all the constitutional remedies you can devise. Then, before any healing process is attempted, a fresh blush may surround the destroyed part, or fresh tubercles may arise adjacent to the original locality, and you go on destroying until the patient declines any further treatment.

Warty growths, or lupus on the extremities, proceeding so slowly and occasioning so little inconvenience or disfigurement, are rarely allowed to be destroyed, though more favourably situated for this treatment than when on the face.

Lupus Erythematosus, is treated exactly like non-exedent lupus. Scrofulous lupus is treated as scrofula, internally with iodine and iron, externally as simply as possible.

Keloid admits of no local treatment; the best we can hope from destruction is a cicatrix; as keloid attacks cicatrices forming hypertrophies, there is no use in either destroying a cicatrix so attacked, or in destroying the true keloid, to leave a cicatrix.

The constitutional treatment of lupus, is always to improve the general health; for all varieties, good food, good air, light and exercise, are imperative to success.

Cod-liver oil; iodine and tonics, as stimulants to the circulation; iron, if there is anæmia; and for all forms, arsenic, though the greatest success of this drug is in the ulcerative forms.

Hunt first pointed out that lupus exedens could be cured by arsenic steadily given. It is not so serviceable in other forms, unless at the very commencement.

It is easier to prevent destruction than to produce construction, so that, by quickening the circulation with arsenic, the destructive process is arrested. In lupus non-exedens of any standing, as long as you can get the patient to take arsenic, the disease is arrested and a cure foreshadowed; but the retarded circulation which causes the cutaneous disease has not existed so long without producing internal changes, and these interfere with the diges-

tion, so that generally just when your hopes are greatest, you have to abandon the arsenic to attend to minor complications, and finally wander in search of new remedies, equally failing.

You will find that the majority of these cases occur amongst the poor or the aged, and that whilst the general treatment, apart from medicines, that you suggest cannot be obtained in the former, in the latter life is ebbing so fast as to render anything unavailing. You may hear of an old man in whose case caustics have been applied again and again, until the patient has refused to submit any longer; his description will remind you of Indian tortures, and show how far superior in cruelty is ignorant science to savage invention.

Keloid is said to have been removed by the preparations of iodine, and you may sometimes hasten the progress of circumscribed erythematous lupus, where there is much sebaceous gorgement, by a blister.

The prognosis of *Lupus Exedens* is more favourable than that of the other varieties; these may last long enough for the patient to die of something else, and any *post-mortems* show enough disease to account for death. They may also cease to spread, but it is not very consolatory to a person who has had lupus for thirty years to be told that it gets well in time.

As deficient circulation is rendered worse by cold, so you will find that cold greatly aggravates

all lupoid affections ; and if your patient cannot seek a warmer climate, the part affected must be protected as far as possible from the effects of exposure in this country.

LETTER XVII.

Diseases of the Sebaceous Glands — Sebum — Variations from healthy — Healthy — Seborrhœa — Ichthyosis — Sebaceous—Horny—Pityriasis Eburnea—Detained secretion—Milium—Acne Indurata — Molluscum Pendulum — M. Fibrosum — Vitiligoidea — Comedones — Molluscum Contagiosum—Sebaceous Tumours — Acne Punctata — A. Pustulosa.

Treatment of Sebaceous Disorders — General — Local.

Acne—Varieties — Description — Capillary — Climacteric — Simplex—Disseminata —Treatment—Local—General—Coloured Sebum.

SIR,

Sebum is the secretion of the sebaceous glands. It consists of oleaginous matter, with which is mixed a certain proportion of epithelial scales.

The skin is kept soft and flexible by this secretion, which is formed in greater quantities on those parts that are liable to friction than on the general surface, and it is also secreted sufficiently fluid to run imperceptibly over the skin, so that with ordinary cleanliness its presence is unnoticed.

The variations of the sebaceous secretion are numerous, without amounting to disease. Very cold and dry or very greasy skins are common, without

being more than peculiarities in which all the members of a family share; and this hereditary tendency is also seen in those graver aberrations which constitute diseases of the sebaceous glands.

These diseases are excessive secretion, diminished secretion, retained secretion, offensive secretion, and some rare forms in which there is pigmentary formation.

The healthy formation of sebum depends on the vigour of the cutaneous circulation. It is increased by warmth, exercise, and good living. It is diminished by cold, starvation, and sedentary habits. But we do not find that great deviation from the healthy standard of secretion is always accompanied by any corresponding alteration of the pulse; nor do any of the above agencies, or any medicines, general or topical, that we are able to command, cause a variation of the flux at all to be compared with that resulting from morbid action.

Excessive secretion, or *Seborrhœa*, varies in quality. It may be seen as oil dropping from the clitoris, or it may be mixed with a greater quantity of solid matter, and be poured over the surface like a coating of spermaceti.

Any slight inflammation of a medicinal or morbid nature may cause an excessive formation of sebum, locally and temporarily.

Diminished formation of sebum may be loss of the secretion as a whole, or loss of the due proportion of oleaginous matter; or the diminished quan-

tity of the latter may be replaced by excessive epithelial formation.

As results from the above-named causes, we have *Seborrhœa* proper, either very fluid or slightly fluid; sebaceous *Icthyosis*; *Pityriasis Eburnea*; and horny *Icthyosis*, or fish skin.

In sebaceous *Icthyosis*, the whole body appears covered with a thin layer of wax, rendered more soft and elastic by fatty admixture. This layer is broken into irregular polygonal scales by the movements of the body. It has been washed off the hands and wrists, and rubbed or melted off such parts as the axillæ, whilst from under the scales processes are seen running into the orifices of the sebaceous glands, assisting in retaining the scales to the surface. The colour of the whole varies from dirty white to greenish yellow, according to the amount of dirt and dust mixed with it. On some parts, as the abdomen, the plates of secretion are large, and closely adherent; on others, such as the shoulders, the edges of the scales are detached, and the retaining processes clearly seen.

If this formation of secretion is not so oleaginous, nor so excessive, the plates do not adhere, but fall off in small scales like the dandriff or scurf of the head, and then the affection is termed *Pityriasis Eburnea*.

The sebaceous glands are lined by continuation of the epidermis, and, like this covering, the lining is renewed continually. If the sebaceous glands,

instead of secreting their due proportion of oleaginous matter, form epithelial cells, this altered morbid action is shared by the surface of the skin. The result is a hard horny covering, which is true Icthyosis.

Icthyosis proper, or fish skin disease, requires for its development that the epithelial formation should be so slow that the cells may closely adhere to one another and to the surface, and that there should not be more oleaginous matter formed than is necessary to assist in such adhesion.

It is comparatively a rare disease, but when the above conditions are present it is seen as a hard, horny, and closely adhering exudation, of varying extent and appearance. On the thighs, shoulders, and buttocks, it may be in distinct irregular nodules; on other parts, the lamellar formation may prevail; or either of these in different cases may be the only appearance. Those cases where spines have been seen are only exaggerated forms of this variety of Icthyosis, for there is no apparent limit to the growth of horny matter, when favoured by neglect and assisted by dirt.

Any attempt forcibly to remove the scales of horny Icthyosis is painful, and followed by bleeding, for they are one with the epidermis, which is removed with the scale.

Winter renders all forms of Icthyosis worse, causing, on the one hand, excessive secretion to congeal and more easily harden; on the other, ren-

dering still less what is usually formed. Washing at that time is also less frequent, so that scales formed are not removed by its agency, whilst what soap and water is used renders deficiency greater.

There are cases, transmitted from early periods to the present time, of horny formations on different parts, which cases on examination appear to have an increased formation of sebum, gradually hardened and protruded through a dilated duct as a basis.

But this is entirely contrary to present experience, for when sebum is retained in a gland or a duct, the aperture being patent, it prefers going anywhere except through that opening, and whilst it will push the skin before it, or otherwise exercise great force, there is never the slightest collection expelled through the natural opening, or liberated in any way except by inflammation and suppuration. Thus you see there is no excretory force.

Sebum may be secreted, the duct being closed; it may cease to be secreted when a little has been formed, or it may continue to increase, and it may or may not be attended with inflammation. When the duct is closed, and the sebum is retained beneath the skin in minute globules like white shot, giving a general seedy and unhealthy appearance to the face, the disease is called *Grutum*, or *Milium*. The spots are most noticeable in the loose folds under and about the eyelids. They are also

common on the scrotum, prepuce, and female genitals.

If the secretion increases with a closed duct, it may elevate the skin into a small irregular protuberance, somewhat cylindrical, with a broad base, the surface being hard and indurated. This is called *Acne Indurata*.

If the growth continues, the gland may rise, enveloped in skin, and gradually increase in size, remaining attached to the surface by a stalk or peduncle. This is called *Molluscum Pendulum*, and is common about the bodies of elderly people, when it is found either distended with sebum, some fat cellular tissue, and a few hairs, or it may be shrivelled and wasted, apparently only a cutaneous envelope attached by a peduncle to the surface of the body.

The gland may descend beneath the skin, giving rise to those fatty formations called sebaceous tumours, of which *Molluscum Fibrosum* appears to be a variety, though not directly traceable to a sebaceous origin; it consists of fatty matter deposited in nodules beneath the skin, of various sizes, from a pea to an orange, but flatter and more oval than this fruit.

When sebum is retained in the eyelids, it assumes a yellowish appearance, consisting of oily globules, fat, and cells; it is seen in brownish-yellow patches on the eyelids, and it is called *Vitiligoidea*, or *Xanthelasma*.

When the duct is open the retained sebum becomes discoloured and black at the aperture from adhesion of dirt; it may envelope the base of a hair, or form a small conical elevation, just raising the surface, and it is then called a Comedo; if it raises the cuticle into a semi-globular form, with a central black spot or depression, the name given is *Molluscum Simplex*, or *Contagiosum*, from some supposed contagious tendencies discovered by a fertile imagination. In those cases where it appears immaterial whether the duct is open or closed, and we have great enlargement of the glands, they are called simply *Sebaceous Tumours*. There appears no reason why these tumours should at one time be sunken beneath the skin, and at another elevated above it. At the angle of the nose, where there is plenty of loose tissue, the tumours are as often, if not more frequently, raised than sunken; and it is sometimes possible to find the orifice of a sebaceous tumour, and to squeeze out some of the contents through it. As the retained secretion augments, the convolutions of the gland^{*} are gradually unwound, the membrane thickened, and a large and increasing secreting surface produced. If beneath the skin, this envelope is of considerable thickness and toughness. When an external tumour, the skin becomes stretched, thin, and gradually adherent. The contents in all cases may pass through various changes, not necessary here to dilate upon, except to say that where they

have been long stationary, the sebum has sometimes a gristly appearance and consistency. These tumours are cherished apparently by their possessors, if the numerous formations constantly seen on faces are any criterion. Why people should be so disfigured is inexplicable, even if they don't share the opinion of some who think that in old age these tumours may take on a malignant action. That they may ulcerate when lowered vitality shows itself in attacking a weak part is very true ; whether that ulceration is malignant or not, it is to be hoped you will never allow your patient to confirm or disprove. In the external ear, where everything is hard and adherent, sebaceous collections are very frequent ; if they arise within the canal they may be a source of deafness ; in some of these parts there is neither skin to elevate or tissue to sink into ; but even there, instead of making its exit from the surface, the sebum distends and increases laterally, and thus you have a deposit of secretion in a circular form whose diameter is three or four times its depth.

When the tissue round a Comedo inflames, the form then resulting is called *Acne Punctata* ; and if, in any of the sebaceous retentions of a similar form, pus appears at the surface, it is *Pustular Acne*.

The treatment of these disorders of the sebaceous secretion is principally local. It is true that when there is any obvious derangement of the general health in *Icthyosis*, we may sometimes obtain satisfactory results by attending to the nutrition, by

cod-liver oil, by tonics, and occasionally, in Pityriasis Eburnea, by arsenic ; but in most cases the relief afforded by internal remedies is indefinite and uncertain. The use of external applications is also not very successful, for though as long as they are continued the disease may possibly be kept in check, on their discontinuance it generally returns. As a stimulant of the sebaceous secretion, and promoter of its fluidity, glycerine is the most potent medicine we are acquainted with, and it has a certain determinate action ; consequently, when sebum is either deficient or wanting in fat, we may have the best hopes, if the patient is a child, by an application of oil and glycerine of curing the disease, trusting, whilst we rectify the deficiency by stimulating the glands, and at the same time supplying the desideratum artificially, that as growth proceeds the body will become capable of performing its cutaneous duties unassisted, endeavouring persistently in every way to assist the general health. When both fluidity and quantity are excessive, cold bathing, light clothing, and absence of all stimulants are essential ; if the disease is greatly manifested around the glans or clitoris, tannin lotions in addition are very useful ; this agent may also be used generally as a bath.

When there is a layer of sebum over the body, anointing with oil or grease will assist a hot or vapour bath to remove it, soap taking the exudation then easily away. If there are hardened nodules,

the inunction once or twice of equal parts of oil and glycerine will easily loosen them. Continuous use of these remedies and ablutions will keep the disease from being obnoxious; but as a rule, the people who suffer from Ichthyosis consider these remedies as bad as the disease. For large collections of sebum in or under the skin, there is nothing but extraction, for if the sebum is dissolved out, sometimes a tedious and not always a possible process, it quickly re-forms. It may be necessary to cut through the skin, or only through the cuticle, but in either case it is desirable that the sac should be entirely removed; if, unfortunately, a portion is left, it can be felt in or under the skin, as a slight hardness with undefined edges, causing some protuberance on the surface; and this is very permanent, no absorption or suppuration taking place. If removed by incision of the scalp, collodion is useful to keep the edges together. Comedones are easily squeezed out, but if the skin is very harsh, or if they exist in hundreds, it may be better to facilitate the process, and endeavour to get rid of them in a more wholesale manner.

The best solvent of sebum is benzole, and it may either be used pure or as a lotion. If there are collections in the convolutions of the ear, where instruments can only be inconveniently used, pure benzine, applied with a brush, will readily dissolve the sebum, leaving the central black spot quite intact, as a pillar of dirt and hairs in a cavity. If

used on the face, back, or shoulders, some camphorated oil being added to ten times the quantity almond oil, the mixture should be well rubbed into the skin at night; in the morning the benzole lotion should be applied with a sponge or flannel, and afterwards the parts well washed with warm soap and water.

You will have noticed that this is the first Letter in which the name Acne is prominent; it is applied to many diseases of a tubercular nature. If you peruse its history, you will find that it affords an instance of the difficulty of drawing a sharp line of definition between various diseases, which really only differ in amount of the structure involved. There is no appreciable separation between a small carbuncle and a large boil, nor between a small boil and a large tubercle of acne. When a definition has been attempted, writers have generally soon departed from definition to description, and some of the following remarks had better be considered as descriptive.

Acne is an inflammation of the cellular tissue surrounding a sebaceous gland, and is accompanied by the signs of inflammation,—hardness, redness, and swelling,—which produce a tubercular elevation; terminating in resolution preceded by exfoliation, or in suppuration.

You know that the sebaceous glands secrete sebum, and that they usually open into a hair duct; you can therefore easily understand that aberration

of secretion or capillary irritation may cause inflammation in the surrounding tissue; these are the local causes of acne. In addition, there is constitutional acne, produced by languid circulation; and accordingly as these causes are single or combined, so the exact manifestation of the disease varies. Thus it may be constitutionally chronic; occasional or temporary; may be joined to, if not caused by, other disease; may depend on extraordinary calls on the system of a climacteric nature; or result from the administration of certain remedies of a depressing character, and, with the above general states, there may be the local additional modifications. When constitutional acne is present, the tubercle may merely exfoliate and resolve; it may contain a minute portion of sebum, formed at the first blush of inflammation, which gradually comes to the surface as the swelling subsides; it may surround a comedo; it may give rise to suppuration independently; or, enveloping the retained sebum which may or may not be thrown out from the skin, the suppuration may be sufficient to cause the gland and a small portion of tissue to be liberated with the pus; or it may consist of a globule of this fluid without any other perceptible admixture. In a case where constitutional acne supervenes, many comedones being present, you will probably have all the above varieties present at one and the same time. Now these are all independent of capillary causes, but the hair-growth forms the basis of a

very annoying form of acne. At the approach of puberty, there is general excitement in the capillary ducts, sufficient in many cases to cause inflammation and suppuration; but the hair may be obstructed by retained sebum, though this deposit may have been previously inert and unnoticed, and your patient, a young man perhaps, is much annoyed that his forehead should be disfigured by a large red pimple; not waiting until some definite result is apparent in the tubercle, he endeavours to squeeze out its contents, and by the pressure causes the effused serum to exude, nothing but water, he remarks; by repeated like attempts suppuration is caused, if at first doubtful; and at length, facilitated frequently by abrasion of the cuticle, a little drop of milky pus is ejected, and with it, or remaining slightly attached to the aperture, is a little capsule the size of a dust shot, containing hardened sebum and a few aborted hairs; this is capillary acne of puberty, and is accompanied by the most robust as well as feeble health, lasting for some years, until the capillary growth has been liberated or subsided in its efforts. There is only one useful plan of treatment to be pursued, and that is by a free incision to abbreviate the duration of each pimple's existence. The connection between the sexual functions and capillary formation is very evident, though inexplicable; and now that the great school of vocal music at Rome is extinct, and the manufacture of male sopranos no longer practised,

you may never be able to verify the stated fact that they were always free from attacks of acne; they certainly were devoid of hirsute adornments, and were easily recognised by their dead white complexion. Acne is not confined to the face and head, but equally attacks the backs and shoulders; not, however, being common elsewhere; in a young female, there are often fifty tubercles on the back in various stages, slowly desquamating, of a pale red colour, and in these there may or may not be some sebum; this is called *Acne Disseminata*. The use of diluents, and of such spanæmics as potash and soda, will produce acne; and there is one medicine, iodide of potassium, whose powerful depressant influence, combined with its action as a glandular irritant, is a very frequent cause of this disease. When this medicine is given for specific disease, the patient is often highly satisfied by the appearance of many tubercles of acne, which he considers as the disease being driven out; but the practitioner neither wishes to produce nor rejoices on seeing such a result.

There is another form of acne, in which the inflammation takes a deeper and more extended course. Suppuration proceeding in the subcutaneous tissues, the elevation of the thickened skin is considerable, and collections of pus, as large as a bean, are only liberated by a deep incision through the skin. A certain amount of absorption may be produced by blistering, but the matter soon re-forms

or re-collects, and the lancet has to be used after all. This form is usually seen on the face, and is often followed by considerable white depressions, that take a long time to recover the natural appearance. The lancet is always the best remedy when there is anything to come away, which may easily be detected by the hardness the tubercle presents on a tactile examination; in all cases, except the very acute, it reduces to days what would otherwise last weeks; and, compared with an incision, all other local remedies of an irritant or stimulating character, such as bichloride of mercury lotions or iodide of sulphur ointments, are comparatively useless; they certainly do not prevent local irritation, and if the cause is constitutional, they are only weak adjuvants to the treatment.

The treatment of constitutional acne after puberty, is not satisfactory. Arsenic as a tonic, warmth to the surface generally, cod-liver oil, quinine, tonics, mineral acids, all that is included by attending to the improvement of the general health, good air, good living and exercise, will possibly or even probably cause great improvement in the eruption; but even if you can order and the patient obtain all that is best, the winding-up process comes to a termination at last, and when stimulants cease to act, the disease returns. If there is any special flaw observable in the digestion or nutrition, such as following an exclusively vegetable diet, by removing any such obvious cause, or by alteration

of manner of living, and persistence in such alteration, a permanent cure may be effected ; but generally you are asked to do by medicine what Nature has left undone—to make the weak strong, the feeble vigorous ; if you can do this, you will not only cure acne, but become a general benefactor of mankind.

There are persons of middle age whose faces are never free from one or two tubercles of acne, arising, disappearing, or in full bloom ; but the persistency of the specimens does not render the possessor more tolerant or more satisfied with their presence ; and the irritation they cause is shared alike by those who consider that nature has endowed them with an unusual proportion of personal attractions, and by those whose beauty is more mental than material. In such cases, any soothing and innocuous application, some simple form of either unguent or lotion, may be ordered ; it will keep in the profession what would otherwise go to some perfumer, and will at all events do no harm, and serve as an amusement. If the patient is anxious for a more active remedy, and is willing to take a course of arsenic, there can be no objection on the practitioner's part to give it. It is certainly a powerful medicine for a very slight disfigurement ; but that is for the patient to say, and many are desirous of even more heroic remedies, if there is a chance of their being rendered beautiful for ever.

There are a few cases on record in which the sebaceous glands have formed pigmentary matter

with their proper secretion. The cause of such formation is entirely unknown, and their treatment equally so ; such cases are excessively rare, and are not of great importance.

LETTER XVIII.

Diseases of the Sebaceous Glands continued — Introductory — Peculiar Odours — Domestic Experience — Changes that occur — Local Bromidrosis, Hebra — Bromidrosis — Occasional — Permanent — Acute — Treatment — Affections of the Sudoriparous Glands — Anidrosis — Idrosis — Local — Chromidrosis — Hæmatidrosis — Treatment of these Affections.

Rosacea — Description — Varieties — Causes — Chilblain — Treatment — Galvanic Caution — Blister — Excision — General.

SIR,

It is probable that every one has some peculiar smell, perceptible to the more acute nasal organisation of animals, though not appreciable by human noses. Dumas states that the Comtesse du Barri shared with Cleopatra the privilege of exhaling from her person a captivating odour; whence he obtained this idea is not stated, but another French author proceeds to enlarge this subject, and attributes to his heroine a perfume of violets. This conception is not half worked out, and it might be preferable to give to each of a family a separate bouquet, than to indulge in impossible poisonings, and the incredibly sudden broken blood-vessels so much in vogue. How pleasant to render all

enquiries as to the presence of an adored object unnecessary, by simply sniffing at the door.

Whether or not any odour from the skin can be agreeable may be a matter of taste ; that there are many eminently disagreeable is a matter of fact, which fact has received but little notice, and even when noticed the slight mention of it has apparently been made under mistaken comprehension of the cause, and, whilst elevating dirt to the dignity of disease, has left the real disease entirely untouched.

You are in the habit of taking your morning bath, and with plenty of soap and water removing the daily dirt ; if, however, by any chance you should have occasion to lie before a fire for two or three days, put on woollen socks, and over them wear a pair of sheepskin slippers, which are very comfortable to the feet ; at the expiration of the above time, some one of your household will probably enquire “ if you take your bath as usual ; ” a counter interrogation leads to the assertion that your feet are very offensive. On getting into bed, you ascertain triumphantly that your feet and possibly socks are perfectly free from smell ; examine, however, the slippers and you will find them most offensive. The warmth has caused volatisation of some of the components of the sebaceous secretion, these have been retained in the slippers, and there have decomposed, forming some offensive compounds. What these compounds, or any others

formed by change of sebum as secreted or after secretion are, is not known, they have never been isolated; and though butyric acid or some salts of this acid may probably be the principal offenders, yet it is only a matter of supposition.

When this offensive formation of sebum takes place in process of secretion, or so soon after secretion as to be inseparable from it, the disease is called Bromidrosis or Osmidrosis, and is either permanent, or occasional, or even acute.

The effluvium attached to the feet has been called local Bromidrosis, and the treatment for it, described by Hebra as a specific, is to envelope the feet in certain resinous preparations, which are to be renewed continually for many days. It is curious that, whilst for endless constitutional diseases Hebra recommends water or soap and water, for dirt he discards his favourite plan and goes in for plaister; and not this only, but the subjects of the treatment are described as wearing their socks with the accumulated dirt of months. Why they should suddenly awake to a sense of cleanliness, or if they may after the treatment still continue so long without changing, or without the coverings becoming dirty, is not apparent; nor is it even stated if the treatment prevents such accumulation from being offensive afterwards. The feet of a tramp who walks barefooted are never offensive, for volatile matters are not retained, and earth is a great deodoriser; but if he wears boots, which are possibly very easy, the

retained perspiration softens, and the friction rubs off the dirt; the sebaceous secretion now liberated lodges in the leather, and there decomposing stinks abominably; to the decomposition of the sebaceous secretion the offensive discharge of Intertrigo is also mainly attributable.

Many of the forms of Bromidrosis do not often come under medical notice. As when a person who has always some odour present, generally only perceptible to himself or immediate associates, and as it is only at times it becomes very bad, habit renders it bearable; or those cases where females at their menstrual period, are noticeable from the strong scent their persons diffuse. These strong smelling bodies are often of a sanguine temperament, and the odour is of a musky or foxy nature; but the bilious people also suffer from it, and some of the smells are indescribable, but very offensive and sickening to those around. Your advice may be sought where a child in a wealthy family suffers from acute bromidrosis. You will find that though washed, and every garment changed five or six times a day, the patient is an intolerable nuisance to an entire household. Every garment taken off, the bed, bedding, and every article capable of absorption in the room, is thoroughly saturated with stench. If you have the child's clothes taken off, you will see that the sebaceous glands are free and unnoticeable, that the skin is dry with very little sudoriparous action, and yet from the skin comes

the stench. You will also notice that the bowels are confined, the liver inert, the tongue white and coated, and the urine scanty. These symptoms give the clue to the treatment, which is very successful ; light diet and clothing, plenty of exercise, free purgation, combined with diuretics, and the case is cured. But those who have once suffered are always liable to some occasional return of the affection in a milder and less offensive form, for which no treatment is requested or necessary, as a dose of opening medicine relieves the case. You have now a description of bromidrosis, and you need only recollect that any so-called local forms are only want of cleanliness. But the exact cause of the disease is as yet a mystery ; we do not know of any such sudden action of the sebaceous glands as would produce bromidrosis as an instantaneous accompaniment of a mental emotion ; yet this is a very frequent form of the disorder, and the only possible explanation is that the mental emotion quickens the circulation, causing increased glandular secretion, which secretion is unhealthily formed, and is either in a decomposing state when exuded into the duct, or becomes immediately decomposed on formation.

It does not come within the scope of these Letters to discuss the various states of increased or decreased perspiration, when associated as symptoms with other diseases in which cases the condition of the skin is only a minor element ; in some

persons, however, there is always a great deficiency of perspiration, the skin being always dry, with possibly some slight moisture on the palms of the hands or soles of the feet, as the greatest variation. In these cases increased capillary circulation produces a red, dry, hot surface, unrelieved by moisture ; this is called Anidrosis. On the other hand, the skin in other cases is always moist and lax without any corresponding increase of temperature ; this is named Idrosis, Epidrosis, or Hyperidrosis. There are some cases on record in which, owing to nervous agencies attributable to influences, local or of unknown origin, Idrosis has been localised, one half the body or face being dry and the other half wet with perspiration. These cases of local Idrosis are only curiosities, and are in this respect associated with Chromidrosis, or coloured sweat, from the internal exhibition of various substances, such as copper, or from such biliary derangement as shall tinge the perspiration. Hæmatidrosis is really hæmorrhage from the skin.

Want of ablutions and personal cleanliness will to a certain extent check the action of the sudoriparous glands, whilst soap and water, with friction, by exciting the circulation supplying those glands, and at the same time freeing the skin from imperfectly detached or adherent epithelial scales, increases the amount and constancy of the perspiration ; but when there is no other tangible affection to which the excess either way of sudoriparous action

is secondary, such action is not easily controlled. Excessive indulgence in Turkish or hot baths will sometimes render the skin so lax that it is always bathed in sweat; but these baths do not act equally well in those cases of anidrosis where the benefit would be highly desirable.

By mineral acids, or by tonics internally, or by vegetable or mineral astringents externally, great sweats may be somewhat abated. By sudorifics, frictions, or baths of all sorts, a dry skin may be induced to perspire, but with the cessation of the stimulant or astringent remedies the skin relapses into its old habit and condition.

The skin of the face is very vascular, and from its position much exposed to variations of temperature, whilst its anatomical relations render it sensitive to every variation in the circulation, whether chronic or acute. These conditions render the skin liable to a disease called *Gutta Rosacea*, *Bacchia*, or *Acne Rosacea*, under which name have been classed various forms of sebaceous irregularities which have at the most only an accidental connection with true *Rosacea*, which is a vascular disorder.

The rosy cheeks of a healthy child show that the circulation is vigorous and unimpeded; a blush denotes the quickened action of the heart, and a hectic flush a febrile rapidity in the circulation; in all these cases, the capillaries are distended slightly, but not beyond the point of contraction, but when the pressure is constant, and long con-

tinued, they are dilated permanently, becoming hæmorrhoidal and enlarged. This distension may be caused by continued irregular exposure, by arrested circulation, or by actual want of power to keep the blood flowing through the capillaries. Thus we see the first in the faces of sailors, who are exposed during their watch on deck to the beating of cold winds, and who, when they go below, descend into hot close berths, with faces flushed and eyes injected; the second, in those elderly people who, gradually becoming stouter, have the cutaneous veins loaded with fat, and the liver torpid with good living and want of exercise; the third form is associated with poor living, cold extremities, chilblains, and in women it appears as though with tight lacing, though in fact they have nothing to lace.

The appearance which Rosacea takes in these forms may be general congestion over a limited space; it may be as enlarged capillaries, the lesser vessels not being sufficiently implicated to give a uniform colour to the part; or it may be a combination of both these appearances.

When the larger capillaries are alone affected, the disease may not be visible in a morning, or after a brisk purgative; but when the bowels are confined, or after a heavy dinner, the distended vessels appear like the rivers in maps of unexplored regions, arising indefinitely, and running nowhere.

If there is any sebaceous derangement with this

disease, it becomes much more obnoxious, for the surfaces of small sebaceous tumours are chosen places over which the enlarged vessels meander, and on which they luxuriate. In more advanced forms of this variety, the capillaries are still more distended; they then form either little blue venous sacs or lakes amidst the capillary rivulets, or they are still more numerous, and on the end of the nose form a pulpy vascular coating, raised above the level of the surrounding skin, being in fact a hæmorrhoid of the facial capillaries.

The disease does not always end here, but, instead of simply taking a course which leads to vascular enlargement, is more active in its results.

We have seen that a tubercular formation in the skin, from a morbid influence, as in syphilis or lupus, receives enlarged capillaries, which arise and assist in keeping alive what disease has called into existence, the process being due to excess of white corpuscles.

In the last form of Rosacea the converse of this course of events takes place. The capillaries, enlarged by constitutional derangement, exert the superabundant vitality thus conveyed in producing hypertrophy of the skin and tissues connected with it. The hypertrophy grows gradually, until a large protuberance is formed. This is usually originally confined to the skin of the nose, and may from that organ be almost entirely detached, being retained only by a peduncle; or the base may extend with

the growth of the tumour, and gradually involve the upper lip and cheek. These tumours sometimes attain a great size, hanging down below the chin, leaving the mouth and nostrils open. In these cases, the magnitude of the tumours, called Lipoma, causes great inconvenience, though without pain. They require raising up to permit food to be taken, each succeeding year increasing the deformity, and rendering their cure more difficult; and the orifices of the sebaceous glands, which are at first often distended, very large, and countersunk below the surface, now become almost obliterated, the surface being smooth and nodulated.

The causes of Rosacea may be gathered from the above remarks. It is always situated on the face (when elsewhere, it is called simply enlarged capillaries), the passive uniform variety differing from chilblain only in the cause; in rosacea being simply stagnation, without any tendency to either resolution or exudation; and there is also no eczematous determination in any of the forms of Rosacea, for if that disease is present, with the same state, it prefers from hydrodynamical laws the lower extremities.

Rosacea, though called Bacchia, is not necessarily produced by the use of spirituous liquors, except as a secondary consequence of the state which habitual toping induces; it may, on the other hand, be caused by want of proper nourishment, and the languid feeble circulation which results

from cold and starvation. When this is in a female, we have usually the various forms of female disorders as concomitants, not as causes, of Rosacea, and the treatment which relieves the one tends to cure the other.

The treatment of Rosacea is local and constitutional. The local treatment is limited to the destruction of any prominent large capillaries by the actual cautery, applied as a platina point, heated to whiteness by galvanism. By this means, the centre of any vascular growth can be destroyed instantly, and any enlarged capillary can be followed in all its windings with the greatest ease. There is no pain, and no destruction of any surface or part but that actually necessary.

If the capillaries are in congeries, a blister may excite sufficient inflammation to cause their obstruction and absorption, but when not prominent a blister has no effect, for the vessels are not sufficiently superficial. If they are raised, however, this application is very effectual.

When distinct hypertrophy takes place, excision is the only remedy, and the operation, if performed tolerably early, or when the tumour is peduncular, it is very easy and very successful.

If the surface is greatly implicated, ligature of some of the enlarged arteries that supply the growth is the best attempt to imitate some of those cases of spontaneous cure where the protuberance shrivels and falls off.

The constitutional treatment of Rosacea is essentially exercise; combined with abstemious habits and purgatives, if the liver is gorged and the system plethoric; with warmth, good nourishment, and tonics if the body is anæmic and the circulation languid. It must be borne in mind, that the mechanical distension once having occurred, no medicine will restore the capillaries to their normal elasticity, and that, whilst the prosperous are unwilling to undergo the strict regimen requisite to the diminution, if not obliteration, of the rubicund tone of their face, so the unfortunate are unable to obtain that improvement in their diet and circumstances necessary to keep up the requisite vigour, whose absence has been the first, if not sole, cause of their disfigurement.

Sedentary habits are in the one case a matter of choice, in the other generally of necessity. Patients will take any amount of medicine if they may live how they like, or perhaps how they must; and to prescribe ten miles a day, is on the one hand, looked upon as an absurdity, on the other, as an impossibility. For these reasons this disease, which in the more severe forms is tolerably tractable, is not generally in the minor cases a very felicitous subject for treatment.

LETTER XIX.

Vegetable Parasitic Diseases — Tyndall on the Air — Musk — Conditions of Parasitic Growth — Vegetable Nature — Mr. Hogg — Microscopical Examination — Spores and Filaments — Favus — Description — Tinea Tonsurans — Description — Kerion — Tinea Circinata — Description — Tinea Versicolor — Description — Causes — Tinea Tarsi — Tinea Decalvans — Tinea Sycosis — Description — Treatment of Parasitic Diseases — Local — Blistering — Case — Lotions — Ointments — Constitutional — Conclusion.

SIR,

The recent researches of Professor Tyndall on the air we breathe show that we are only beginning to properly explore the manner of the diffusion of disease by atmospheric influences. The diseases of the skin to which your attention must now be directed owe chiefly their origin to such influences, and as they are the subjects of much difference of opinion it will entail a longer consideration than their simplicity would otherwise necessitate.

The familiar example of the perfume diffused by a grain of musk shows that vegetable matter may exist in the air in so finely divided a state as to be

imperceptible to any other than the nasal organs ; but there are numerous vegetable living germs whose presence can be seen, and which germs are detectible on surfaces animate and inanimate.

These germs, falling on the skin, grow if they find such skin suitable for their growth, and the other conditions present which are necessary for such growth. We thus have what are called the Parasitic diseases of the skin, which implies the existence of such a state of health as permits vegetable growth, and the presence of such vegetables to grow.

Such being the case, it is not necessary to ascertain which of the above events is antecedent ; both must be present and associated. If you have a child in bad health, the hair badly nourished, you have often baldness. If such a child comes into contact with some vegetable germs, instead of simple alopecia you have ringworm ; but you may have vegetable germs on all or any other skin affections without producing any of the parasitic diseases ; nor is it of any importance which vegetable germ is present, for the division into various forms of vegetable growth, according as this growth is more or less vigorous, appears subject to great variation.

We are not able to say what conditions are necessary for the spread of these diseases, we find some much more contagious than others, but the difference which causes them to be more or less so,

either in their inherent qualities or in the condition of the skin infected, is not perceptible.

We do not derive much addition to our knowledge from the results of treatment of these diseases, for whilst many are easily and certainly cured by local applications, others are rarely removed by any but constitutional remedies.

There was some doubt expressed formerly as to the vegetable nature of the parasitic germs, and a ludicrously feeble attempt to prove them degeneration of tissue. Of their vegetable nature, there is not the slightest doubt, though the line of demarcation between the lowest forms of animal and vegetable life is quite illusory, and though the blood contains in health a considerable quantity of vegetable matter, which shows itself forcibly in some mucous diseases of exudation, yet the vegetable germs of the parasitic disorders are not originated from the inside of the body.

The ranks of dermatological writers have received an important addition in Mr. Hogg, whose recent work on Parasitic Diseases is welcome, if only for strengthening the arguments of those who believe that for skin affections in general, constitutional, not local treatment is the main principle.

For some time, the skin has been looked upon as a field, and various applications have been recommended, and dignified with the name of Parasiticides, which were to be used as a sort of top-dressing, to cure very varied complaints.

Exclusion of the atmosphere has been stated to be specific, and diseases have been reported as planted and cultivated on healthy skins.

Against such opinions, Mr. Hogg is a valuable auxiliary ; but his conclusions do not appear to do more than assert the uniformity and diffusion of vegetable germs. There are certainly no inferences to be deduced from his examinations which would separate entirely vegetable growths from these diseases.

Mr. Hogg demurs to germinal growth of all diseases, and propounds certain difficulties as regards such growth, which admit of the easiest possible solution. The most important he has omitted, and this is, "that microscopical investigations with high powers have a remarkable tendency to support any preconceived ideas in the mind of the operator."

The various parasites that have been named in connection with each disease will be mentioned, without agreeing with those who assert that every complaint has a separate fungus, or at all believing the gentleman who asserts that he can distinguish any disease of this class by the spore or vegetation ; at least he says "with his own microscope," an assertion that will remind you irresistibly of the instrument that Mr. Weller wanted on a celebrated occasion, and is scarcely fair to the rest of the profession.

However, whether you believe that the diseases

now to be described are caused by the presence of a vegetable parasite, whether you hold that this parasite is the same or different in separate affections, whether you think it is vegetable or animal, associated, consequent or precedent on such diseases, is entirely immaterial as regards their diagnosis and cure.

You will no doubt at first, very properly, examine microscopically various hairs from different disorders, but afterwards you will soon find that the recognition of such disorders is easy, and treatment simple, without calling to your aid a mechanical adjunct, though any instrument or apparatus which will supply the place of intelligence is highly popular at present.

When you do examine the hair from parts affected by the following diseases, you will see the hair diseased instead of healthily formed, and that there are vegetable spores and filaments of various sizes and shapes, such spores being forms of the lowest vegetable life.

The parasite of *Tinea Favosa*, or *Favus*, has been named *Achorion Schoenleinii*, and the familiar appellation of the disease is honeycomb ringworm. This disease is rare in England, and requires for full development a neglected scalp and a debilitated constitution. It is easily recognised by the formation of pale yellow friable crusts, which are vegetable spores with filamentous growths.

The first symptom of the disease is slight

redness, and possibly itching; soon the orifices of the hair follicles become distended, and shortly assume a circular cup-like form, through which one or more hairs are seen protruding. In this country the disease is almost always confined to the scalp, where it arises in a patch, or generally diffused. As the disease progresses, the hairs present a dull blighted appearance, most of them being dead, and only retained by the crusts to the surface. If no improvement takes place, the hair follicles may become permanently destroyed, and then irremediable baldness results.

The fungus of this disease is found in the nails, and is also seen on the body, where when favoured by circumstances it grows freely.

As the disease spreads the circular formation of the crusts changes to irregular forms, and you may extract a friable mass of the fungus from the scalp, just as you can raise one tile out of a floor of tessellated pavement, the depression the fungus leaves behind on its removal being like a cavity prepared for its reception, lined with a thin, smooth, red, shining membrane, and this depression disappears very rapidly when the pressure exerted by the fungus is withdrawn.

Favus is accompanied by a very disagreeable smell, a compound of dirt and decay; and in children you have an abundant supply of pediculi. By some dirt has been considered the principal cause of this disease, and want of cleanliness is certainly the

great obstacle to curing it, for the sufferers are not necessarily those in very bad health, but they are often those who are forlorn, and have no friends who can and will perform the part of a nurse, and do for the patient what it is impossible for the latter to do for himself, for it is essential to a cure that the scalp should receive proper daily attention. If to the solitary, friendless condition, there are the usual concomitants of poverty added, if there is a feeble constitution, and if the necessities of life are wanting, Favus is very troublesome to cure.

The pallid, pasty children of those who are capable of providing all the necessities and many of the luxuries of life are often affected by most troublesome attacks of ordinary ringworm, and the parents are unwilling to believe that an alteration of the general mode of living and feeding their children is most essential to their cure.

Tinea Tonsurans, or common ringworm, was formerly called *Porrigio Decalvans*, and the parasite is known as *Tricophyton Tonsurans*.

In ordinary ringworm, the proper cell formation of the hair being replaced by vegetable growth, the hairs only grow for a short length before they break off, giving an irregular, withered appearance to the part attacked. As the disease progresses, no hairs at all are formed, and you may then have sundry secondary signs of irritation, produced by the presence of a substance foreign to the skin. These signs may be pustulation, and even inflammation ;

or there may be infiltration, raising the scalp into a large tumour, apparently filled with fluid, whilst from the orifices of the hair-ducts a gelatinous fluid exudes, and this is all that the tumour contains.

This tumour is a very common appearance with chronic ringworm; it is called Kerion, and you will feel a strong temptation at first to open the swelling, as it gives a fluid sensation to the touch, but any operation merely complicates the disease, as you can imagine.

Tinea Circinata, or vesicular ringworm, generally attacks the body, and is not confined to children; whereas *Tinea Tonsurans* cannot exist in the scalp of an adult, the circulation being too vigorous. This form of ringworm is called vesicular because sometimes it is associated with vesicles; and also from the same appearance it has been misnamed *Herpes Circinatus*. Now, in *T. Circinata*, the presence of vesicles is only accidental; they are quite as frequently if not more frequently absent than present, and when present they are eminently superficial, and not situated on a swollen gorged base like *Herpes*. The latter also has a definite temporary course, getting well without any medicine, and is rarely, though occasionally, seen in an annular form. *Tinea Circinata* is always in a circle or some circular modification. It may appear as a narrow band, gradually increasing in length, and, from forming only a segment, at length complete

an entire circle of inflammation, slightly raised, very slightly desquamating, or studded with vesicles of irregular size. The central area may remain entirely free, or may gradually be covered with the disease, and then you have a circular patch instead of the ring; or the circumference of the circle may enlarge, and, extending equally on all sides, the centre may remain always free, and the parts at first red may become squamous, so that the appearance then is that of a red inflamed ring, many inches in diameter, bounded externally by the sound skin, internally by a desquamating surface, the scales of which are larger and more defined on the parts latest attacked. If more than one spot is attacked, where these circles come into contact the inflammation subsides, and you then have such forms as broken segments produce. The diameter of some of these circles is very great, in others only an inch. The disease, when it attacks the buttocks and adjacent parts, has been called *Eczema Marginatum*.

The parasite of *T. Circinata* has been called *Tricophyton Tonsurans*, equally with that of common ringworm, but it is different altogether in the results it occasions. In *Circinata* the disease is very contagious to all ages; *Tonsurans* is equally contagious, but is confined exclusively to the young. In *Circinata* the disease is eminently superficial, does not necessarily affect the capillary growth, is seen always with inflammation, and retains, even on

the scalp, all these distinctive features; in Tonsurans, the hair of the scalp is always affected, the disease is more beneath the surface, and there is rarely inflammation.

The next disease is called *Tinea Versicolor*, or *Pityriasis Versicolor*, it is equally superficial with *Tinea Circinata*, but has very little if any contagious properties, nor has it any tendency to produce vesiculation. From the colour of the appearance it causes, this disease is commonly known as liver spot. It is generally seated on the trunk or abdomen (though the limbs do not always escape), sometimes covering the trunk almost entirely, at other times only speckling the breast under one nipple, or on the sternum; and it has no symmetrical tendencies, but from its irregular distribution it has been compared to a map. The colour of these irregular map-like patches varies through all the shades of reddish brown (the term *lutea* expresses one tinge) depending upon the complexion of the individual, and the degree of activity present in the disease; and this latter remark applies to the furfuraceous desquamation, sometimes so distinct as to have caused the disease to be called *Pityriasis*, at other times entirely absent.

The attention of the patient is frequently first called to this disease by slight itching; the pruritus is not constant, and never very troublesome, but often sufficiently so as to cause the patient to desire the cure of the disease. Apart from this

itching, there is no annoyance, nor any constitutional symptoms whatever.

This disease is distinguished from simple pigmentary deposits, and from venereal stains, by its superficial character, by its variability in colour, and by the minute desquamation, if present, joined to its irregular outline; venereal stains also following some previous lesion.

Versicolor generally appears when flannel, or those woollen compounds which form a substitute for flannel, have been long worn without a change or without proper cleanliness. It is very common after a course of mercury, when the patient is told to carefully avoid taking cold. This he interprets to mean that he is to hurry on his clothes as soon as he can in dressing, and if, as is very probable, he has taken opiates as well, the feeling of chilliness causes him to restrict his ablutions to a minimum, and possibly to change his underclothing less frequently than he otherwise would do.

You cannot depend on any symptom of contagion for assistance in recognising this disease, for men whose bodies are almost entirely covered with versicolor sleep for years with their wives, who remain entirely free.

The causes of Versicolor, or Chloasma, as it is sometimes called, are, according to a recent voluminous publication, "Debility of tissue, originating in nervous sympathy with the visceral organic system; predisposing causes, assimilative, nutritive, or nerv-

ous debility; remote predisposing causes, dyspepsia, alternation of seasons, variations of climate, pregnancy and menstrual disorder, general nervous weakness, eczematous diathesis, affliction, hæmorrhoids, rheumatism, leucorrhœa, sedentary pursuits, alternation of cold and heat, and hereditary diathesis !!!” The treatment in the same work is stated to be “sulphate of magnesia with quinine or bitters,” nitromuriatic acid, or the inevitable ferro arsenical mixture; locally, the equally universal juniper tar soap, etc. The above causes and treatment show the great progress that Dermatology has made of late years, in propounding doctrines so lucid and simple. But if you choose to disregard all remote and proximate predispositions, and treat the case as if caused by the parasite called *Microsporon Furfur*, you will find it removed in the course of a few days.

Tinea Tarsi is that disease caused by the *Tricophyton* attacking the eyelashes; it requires no special mention.

It is very doubtful if any other Parasitic disease causes baldness other than the *Tricophyton*. However, some spores having been found on bald places, these spores have been called *Microsporon Andouinii*, and the disease, simply loss of hair, they are supposed to occasion has been named *Area* or *Tinea Decalvans*.

There is another disease of a parasitic origin, called *Tinea Sycosis*, confined exclusively to

the male sex, and usually appearing first on the chin or lips; it has also been termed *Mentagra*, and subdivided into *mentagra* of the scalp and *mentagra* of the face. In this disease the first noticeable symptoms may be a little itching, with redness, or a small pustule at the base of a hair; in any case, if left alone, redness gradually spreads over the surface, and this is accompanied by the formation of pustules, on more or less tuberculated elevations; shaving is given up, as requiring too much skill to avoid wounding these places, and the beard, whiskers and moustaches become matted with a glutinous exudation, that is considered like the inside of a fig.

This disease is distinguished from *Pustular Acne* by the hair in the centre of each pustule, and from *Pustular Eczema* by the inflammation being less acute and more deeply seated. *Sycosis* is very chronic and spreads very irregularly, running backwards into the hairy scalp, the lips entirely escaping, in another case spreading only on the face, and involving the hair round the eyes.

If you have any doubt about the diagnosis, you can pluck the hair out of each pustule, and you will find that it comes out easily, and shows under the microscope a brush-like extremity. It is very difficult to find any vegetable parasite, for the changes which precede pustulation are fatal to the vegetable growth; but you may possibly see some spores, and they are called *Microsporon Mentagrophytes*; they

spread over the surface, descend into the hair follicles, cause destruction of the hair, which then, retained by the swollen base, acts as an irritant, causing continued discharge.

The ultimate result of chronic Sycosis is baldness of the parts attacked, but this is very rarely seen. In most cases the excessive action in one hair follicle causes great growth of the hair in adjacent follicles, and the beard is strong and coarse, so much so, that it is only at the edges or on separating the hairs that the mass of crusts is visible.

It has been attempted to associate this disease with shaving, and shaving has been called a cure. Its contagiousness is in any case a very doubtful matter, and a razor the very last means of communication probable, whilst to shave the beard off daily as a cure for a disease of the beard, is a cure only a dermatologist would suggest.

We now come to the treatment of Parasitic diseases, and this is local and constitutional; with two of them, *T. Circinata* and *T. Versicolor*, local treatment is all that is required, without which all internal remedies are useless.

Mr. Startin prescribed for *Versicolor* an unguent with three preparations of mercury; this gives a very formidable appearance to the formula and does no harm. Either this or *Circinata* may be cured much more simply by the dilute citrine ointment well rubbed in; if *versicolor* extends over a large

surface, or if there is any objection to mercury, a lotion of sulphurous acid or the hyposulphite of soda will answer equally well.

For the other diseases the possibility of curing them by local treatment depends entirely on the extent to which they have become established before any treatment has been applied. Thus all forms of ringworm may be easily cured at first by local applications, whilst afterwards there is required in addition appropriate constitutional measures. There is nothing more easy than to get rid of the great bulk of favus crusts by washing and ointments, but it is often very troublesome before the disease entirely goes away. The practice of wearing coverings on the head, and in females of wearing masses of dead hair and various articles as head-dresses, often prolong a case. One woman invariably resumed a false front just when she was nearly cured, and so replanted the disease, very much to the perplexity of the attendant, before he found it out. There is no doubt that a free current of fresh air is a very potent adjunct to all treatment of ringworm, in many cases an absolute necessity for a cure.

It is a little disappointing, after perusing a recent work on Parasitic diseases, in which a new and certain cure is promised, to find that after all it results in nothing more than a repetition of the oldest plan of treatment extant, that is, pulling out and rubbing in.

The whole theory of those who believe in local applications only is, that if you entirely destroy the parasite, you cure the disease; but if you do so you leave the patient exactly where he was, and you have only destroyed the vegetable germs on the scalp; they are still floating about, ready to settle and grow again. But it is unnecessary to discuss measures that require an "if"; you can't destroy ringworm of any kind by local measures when once it is established; you can use these measures as adjuncts, and you must render the soil unsuitable for its growth.

The local measures to be adopted are those which cleanse the scalp, which excite the capillary circulation, or which destroy vegetable life. Some applications combine these requisites. To be of any service they must act in one of the above-named ways.

Fresh air or no air is equally fatal to parasitic growth; stagnant air is eminently favourable, in fact stagnation is a necessity of all vegetable germ life.

Ague is the growth of vegetable spores in the blood, and they increase until they mechanically arrest the circulation, causing the cold fit, the hot and perspiratory stages being merely reactionary. For this disease quinine or arsenic is given. By these medicines the circulation is stimulated, so that the current is not arrested, and then the germ dying the disease is cured; the action is the same in Parasitic diseases though the germs are external.

For the local treatment of these parasitic diseases, we have blisters, ointments, lotions, and soaps, or embrocations.

Commencing with blistering :

The theory is that the application of any vesicant causes, by absorption, irritation ; this irritation causes hyperæmia, the increased flow of blood chokes the capillaries, and then the excess is relieved by the aqueous constituents of the blood exuding from the vascular layer with sufficient rapidity to elevate the cuticle into a bleb, bulla, or blister.

It is impossible to obtain any acrid substance that shall instantly cause the above process ; there is always a certain amount of general absorption before the local action is manifested. But that vesicant is the best which is liable to cause less general action, and which action is the least likely to produce undesirable constitutional results.

Now a very strong solution of bichloride of mercury in ether (applied over any extent of surface) will often cause diarrhœa before the local effect is sufficiently determined to raise the skin. Any less strong or aqueous solution would, of course, be more liable to absorption, and less likely to blister. It is in every way, therefore, a most unscientific application. Besides, in children or in persons of debilitated constitution, instead of simply having exudative inflammation as the result of acrid applications, you are liable to have a

destructive operation, and in place of a blister a patch of dead tissue ; and ringworm signifies both youth and debility.

If the case is of a boy approaching adolescence, and the patch of ringworm is very small, a blister may possibly be used with success, the irritation it causes killing the disease ; in such a case the *Acetum Cantharidis* is the best blistering application, though a solution of bichloride of mercury has been also recommended. The latter is a poor attempt to obtain the advantages of the blister with that of mercury, and, for the reasons already stated, it is to be scrupulously avoided as a dangerous, tedious, and painful application. If it is strong enough to cause a bleb, it is dangerous from the absorption possible ; it is equally, if not more dangerous, when strong, and yet not strong enough to blister.

A fatal case (in which this application was used) occurred some time ago, and the medical practitioner, anxious to obtain some justification or exoneration of improper treatment, wrote to the author whose work he had studied, and whose recommendation he had followed. He was asked in the author's answer, "if the microscope had been used in the diagnosis ?" Whether the child would not have died if this instrument had been employed, or whether the query was ironical, is doubtful ; but the affair recalls an old nursery rhyme.

Ointments are merely the vehicles for applying

either stimulants or antiseptics by means of the unguent; the substances with which it is combined are absorbed, and for Favus and other forms of Ringworm, Tonsurans, Tarsi, Sycosis, the dilute citrine ointment is a very useful form, but you cannot rub in mercury for very long; so after this has had a fair trial you had better turn to lotions or embrocations.

The various preparations of tannin, and of iodine with oil of cade, are then useful, and can be long continued. If you use the bichloride of mercury as a stimulant lotion, it should be very weak; all forms of tannin may be very strong.

Sulphurous acid may be used undiluted, and this is one of the best local applications, far superior to any of the hyposulphites.

One advantage of the use of lotions is that the parts can be kept clean. Parents are very unwilling that children should have their hair cut short, and all greasy or solid applications then vastly increase the trouble of keeping the parts clean. Now cleanliness is all-important, and soap and water freely and continuously used is very essential. If the hair is long the child is liable to catch cold, but appearances are generally most highly regarded in the poor and very dirty, where soap is a luxury, and drying the hair an impossibility.

Any of the foregoing local applications will cure ringworm at the onset, and with cleanliness will prevent its extension afterwards; but when you

have a thoroughly ingrained patch, you will have to do more locally, as well as assist constitutionally.

You must then extract all hairs that are diseased. If the scalp in Favus or Tinea Tonsurans is thoroughly cleansed, these hairs come readily away, and in Sycosis they are equally loose; the apertures of the follicle then being free, the dilute citrine ointment will more easily penetrate.

It may happen that a scalp has to be completely plucked, but there is nothing else for it; and taking care that brush and comb are kept separate, and all hairs thrown away, you must persevere in cleansing, extracting, and if necessary applying ointment or lotion until the case is cured.

On the perfection of the epilatory process depends the successful treatment of many cases in which the constitution does not respond to internal and hygienic measures. In those large schools where ringworm is always present, the cause is to be found in some violation of the laws of health, and the cure is in measures of general operation, not in the treatment of individual cases.

When a patient with parasitic disease has some obvious cause of deranged health, scrofula, anæmia, starvation, indigestion, etc., on the removal of such cause, and on general amelioration of the health with local assistance, the disease disappears.

Fresh air, light, iodine, iron, quinine, tonics of all kinds, antacids, acids, good food, stimulants and

exercise are the proper remedies; the food must not only be good but appropriate, and the clothing adapted to external conditions, so as to keep a proper warmth of surface.

Favus and Sycosis occur sometimes with apparently robust health; in these cases local treatment is generally sufficient.

Tinea Tonsurans always implies some departure from health, and if once established is rarely cured by anything but combined local and constitutional treatment.

For this latter disease especially, and for the parasitic diseases generally, arsenic is a most valuable remedy, and is generally successful in bringing the case to a happy termination.

In conclusion, you must remember that these parasites are essentially mildews, that they grow most freely on a decaying, damp surface, and that they draw their nourishment with equal facility from the atmosphere and from any surface on which they are deposited; that therefore a warm, dry atmosphere and vigorous circulation militate against their growth.

LETTER XX.

Diseases of the Hair—Hirsuties—Universal—Nævi Pilosi—Alopecia—Causes—Modern Head-dress—Coiffeur—Defluvium Capillorum—Alopecia Circumscripta—Ophiasis—Treatment—Canities—Trichiasis—Calvities—Canities—Plica Polonica—Diseases of the Nails—Ingrowing Nail.

SIR,

A modification of the process by which the epidermis is renewed, forms those appendages of the skin called Hair and Nails. Departure from the laws by which these are formed in sufficient quantity and proper quality occasions various affections, which have now to be considered, their growth being affected by the same causes and in the same way as the ordinary epidermis.

An abundant crop of hair has always been considered an important feature in female beauty; in a man it has sundry inconveniences, as we learn in Biblical history, and in this part of the globe is considered a mark of mental inactivity, corresponding to the Chinese habit of wearing long nails to show exemption from manual labour.

When hair is developed on parts where no hair ought to grow, it is called Hirsuties, which is either

general or local, temporary or permanent. It has some undeterminate association with the sexual functions; and respectable moustaches, which require a razor to remove, may occasionally be seen adorning the upper lips of ladies who have never had children, or who have passed the child-bearing age.

There are cases recorded where individuals have been entirely covered with long hair; the family mentioned as existing at Mandalay, in Crofton's *Mission to Burmah*, being a remarkable instance. He describes three successive generations, at that time represented by a mother and two children, whose bodies were completely clothed with long silky hair; the back and eye teeth were absent in these people. More recently, two children have been exhibited at Vienna, similarly clothed with hair.

A general growth of hair over the entire body, and its removal by nature itself, comes amongst those cases of curiosity which are very rare; and as we are equally ignorant of their cause and their cure, it is fortunate that they are not more common. Locally, hair is developed on those specially organised elevations of the skin called *Pilous Nævi*, or Moles. When situated on parts where their presence is considered a disfigurement, they are easily removed by the knife, caustic potash, or galvanic cautery; on other parts you will seldom find any one who notices them. Occasionally a

blister will cause a stronger growth of hair than that on the adjacent unirritated surface ; but such growth never attains the vigour of the hair of the scalp, and is seldom permanent.

Diminution or absence of hair has received many names. *Porrigio Decalvans*, or *Alopecia*, means simple baldness. *Area* is another term for baldness, supposed to be associated with some parasitic disease. *Ophiasis* is when the bald space is narrow and serpentine ; *Defluvium Capillorum*, or general falling of the hair after a fever ; and *Calvities* is the baldness of old age.

In approaching the subject of baldness with a view to its cure, it will be as well to consider the conditions under which the hair grows in its healthy state, and the treatment it generally receives. It is necessary that the circulation in the capillaries of the hair follicles should be properly carried on, and that the formation of the hair should be continuously equal ; if this is not the case the hair is either brittle or becomes afterwards split at its extremities, the adhesiveness of the tissue being imperfect. When the growth is perfect, the hair, after reaching a certain variable length, is at length shed, and is replaced by another from the same tubule or follicle ; a lady's hair varies in length from eighteen to forty-six inches, the latter being an unusually fine tress. Any interruption to the circulation may cause hairs that are nearly separated to fall ; and a severe headache, a close hot

atmosphere, or any similarly trifling cause, is often followed by a more numerous collection of loose hairs in the comb.

In addition to such causes, we have the present style of head-dress, which demands a fixed point on the head for a basis, this centre of support being obtained by stretching and tying together a large mass of the hair, necessarily prematurely loosening a considerable quantity, and gradually reducing the ladies to a half-fledged condition. As a natural result they seek the hair-dresser, who informs them, after careful consideration, that their hair is either weak at the roots, splitting at the tips, or dry in the middle, and the remedy he proposes is invariably the same,—one bottle of our wash, one pot of our pomade, one bottle of our oil, and to be shampooed twice a week. Ladies will not often stand having the head shaved, but with gentlemen, that takes the place of the shampooing, and when once this process begins they are fairly in the hands of the Philistines.

After a time, the circumstances which caused temporary loss of hair may pass away or change, and then the coiffeur gets quite as much credit as he deserves; or possibly a medical man is consulted, who, if he blindly follows that universal formula for all skin diseases of “our ferro arsenical mixture” and juniper tar-soap, safely lands his patient in a wig at last.

Alopecia may be caused mechanically, as by the

continued pressure of a helmet, the follicles in such cases being obliterated; they are quite incurable. It may also be prematurely occasioned by wearing thick, close, heavy caps; after all, the present much-abused chimney-pot hat, if ventilated, is about the best head-dress that could be adopted as regards the hair.

Fevers cause the hair to fall off, generally to return with convalescence. When the head has not been shaved, you may see such cases of "*Defluvium Capillorum*"; but the nascent hair in the apertures of the follicles, will show you that the scalp will soon be covered. Specific virus constantly causes partial or total loss of hair; in some cases the slightest touch causes its removal, until the body is entirely denuded; for such cases the treatment is that adapted to this disease. There may be congenital baldness, but this is extremely rare. The ordinary form is that of a smooth bright patch called *Alopecia Circumscripta*, which increases in size, either by the spreading of the circumference or by the junction of several patches; when, however, it takes a serpentine course, it is called *Ophi-asis*.

There is another form, in which there is general deficiency, but of a diffused character, the scalp being thinly covered with weak short hairs; and baldness may be the result of a cicatrix, no hair follicles existing in that formation. When the hair re-commences to grow on a bald patch, it begins as

a soft white down, gradually increasing in strength and altering in colour, until the normal standard is reached. The ordinary causes of Alopecia are very similar to those of Eczema: indulgence in diet, dissipation or drink, which in some produce an eczematous eruption, in others produce a loss of hair; and the same treatment is required for Alopecia as for Eczema, with this addition, that as there is no lesion of the surface, it is possible to apply local stimulants to increase the local circulation, and also to remove any sebaceous formations that may obstruct the ducts of the hair follicles; all such stimulants have some preparation of Cantharides as their active principle, as being the most powerful and safe application. Arsenic has of course a most powerful influence on the growth of the hair. Its successful administration depends entirely on the cause of the baldness; an absolute cure when a tonic can cure, it fails to give more than temporary relief when the cause is recurring functional disorder or organic change. You will meet with many cases where arsenic has been taken successfully for alopecia, but where it has had often to be taken; and finally the patient has given up some indulgence or habit, and so got rid of his disease and his doctor at the same time.

The ordinary applications to the hair are of the most nasty description, calculated in every way to attract and retain any dirt and dust floating about; and even if you have the hair washed with some

strong alkali, such as ammonia and soap, the perfumer, possibly to make up for imperfect removal of the caustic, feels bound to rub on some greasy and eminently sticky composition, so that in a very short time there is a fresh accumulation of dirt. The only application that should ever be used to clean the hair is the yolk of an egg, and then warm water to wash it off; this, with proper cleanliness in the way of combing and brushing, will keep the hair bright and glossy. If you want to display a favourite curl on some festive occasion, a little of some perfumed lard is admissible; that imported impregnated with the odour of jessamine or heliotrope, is very pure and agreeable.

The baldness of old age is irremediable; but if the scalp is not free from hardened sebum, this may be removed by glycerine, and then a stimulant applied; if this remedy is not soon successful, you need not hold out hopes of an ultimate growth.

Canities, or whiteness of the hair, is the usual concomitant of old age, but it may be congenital or accidental; in any case it is associated with feeble circulation, and it is only to be met with remedies or treatment adapted to improve the general health. We are in entire ignorance of laws which regulate pigmentary formations, and can only infer from the changes that take place in the capillary tints that sundry shades are associated with vigour, and absence of colour with weakness.

Trichiasis, or abnormal direction of the hair, is

only of importance when the eyelashes, reversed, irritate the eye, and they then require removal by means of a forceps.

The hair sometimes varies in colour, either in each individual hair, the shaft being piebald; or there may be locks scattered over the scalp of a darker or lighter shade than the general hue; for these cases there is no special treatment, and you may look upon those cases of sudden bleaching of the hair as being either caused by the shedding of dark hairs, leaving the light ones very conspicuous, or, as is generally the case, absence of hair-dye.

The so-called *Plica Polonica*, or felting of the hair, is simply dirt. The other complaints in which the hair follicles are involved have been considered under the class of vegetable Parasitic affections.

For the growth of the nails there is a special arrangement of the capillaries. These vessels share general irregularities of the circulation, and consequently you rarely find any marked deviation in the formation of the nail without some other cutaneous symptom which affords a clue to the cause.

There are two main varieties of these affections, one in which the nail shows a departure from a healthy state whilst attached to the surface, and the other when the aberration is only seen when the nail becomes free. Instead of the nail being pink, smooth, and regular, it may be more or less studded with white patches, or may be formed in fasciculi,

or in ridges transversely to its growth. For these no special treatment is required, for they depend on some local change which we cannot control. They are, in some form or other, very common, and occasioning no inconvenience are tolerated by the owner. You will constantly see a finger on which the nail grows, year after year, with an unnoticed ridge or depression.

The white marks on nails may depend on some transitory constitutional cause, and they are valuable as affording sometimes a clue to a doubtful case in children. For instance, you may have a sore, or some cutaneous exfoliation, evidently perpetuated by constant picking. The origin of this sore is buried in oblivion. If you examine the nails, however, and find them all marked with a line of white deposit, perhaps half way up in the growth, and then ascertain that some six weeks or two months previously there has been an illness, and that since that time the sore has existed, this gives you an insight into the case at once.

When the nail becomes free from the surface it may either have been formed so brittle that it breaks and chips off on the slightest provocation, or on the other hand it may be so soft that it will not retain its form, and, tearing readily, presents the jagged appearance of an old brush. These cases require careful examination, for they are only parts of some general affection, of which you are almost sure to find traces elsewhere.

Any inflammation of the matrix of a nail, or of the structures adjacent, causes the same peculiar appearance, owing to the swelling round the hard, unyielding nail, sinking it apparently beneath the swollen surface.

Onychia is always syphilitic. Purulent formations, about the ends of the fingers generally, are always signs of debility, and require tonic treatment, cool applications locally, and afterwards stimulants.

What are called ingrowing toe-nails are produced by tight or inelastic boots; the nail, prevented from growing upwards, sinks into the soft tissues, and produces there either a sore, a corn, or an abscess, according as the pressure and moisture varies. The patient often seeks relief by cutting the nail close, thereby depriving you of the leverage its existence would otherwise afford you in treating the case; and if in addition the side is cut down with a view of removing the pressure, everything will have been done to render the treatment as difficult as possible. The treatment is very simple and quite successful, but the nail may require attention every few months to prevent any recurrence of the evil. Any corn-hardened cuticle or detritus being removed, and any small abscess opened, the nail is to be rendered thin, soft, and pliable by fine sandpaper, which is far superior to coarse glasspaper; the nail, cut level with the edge of the toe, is then to be raised, and a small piece of

lint inserted under the side edge; if necessary, a larger plug may be wedged in under the extremity so as entirely to remove the pressure from a sore spot. The nail being rendered thin there is no pressure on the side edges from any weight of boot or shoe in the middle, or at all events none sufficiently great to reach the soft parts through the lint. And it is sometimes possible to coax the nail to grow quite free from the sides by this treatment; but where the nails are formed very thick and horny, a few minutes' rubbing with the sandpaper, whenever they are cut, may be necessary. By attention to this point, the barbarity of removing the nails will be quite unnecessary.

By careful manipulation a nail can be raised from its bed, without any pain; this is sometimes done accidentally by a splinter, which may only give the feeling of pressure, or even this may be absent; unless there is inflammation nothing need be done, as the wood comes out as the nail grows.

LETTER XXI.

Animal Attacks on the Body — Divisions — Effects — Poisons —
 Slug in Fiji — Fish in Mauritius — Scorpions — Centipedes —
 Ordinary Effects — Bites or Stings — Treatment — Bees and
 Wasps — Mosquitoes — Fraser River — Amazons — Result of
 Attacks — Malay Archipelago — Protection — Gadfly — Sheep
 Tick — Humboldt — Wickham — Orinoco.
 Chigoe — Treatment — Vambéry in Bokhara — Fleas — Bugs —
 Secondary Results — Industrious Fleas — Persian Powder.

SIR,

The human body is liable to injuries or attacks from various animals, Vertebrate, Molluscous, Articulate or Radiate, and whilst the result of this liability is in some cases out of the range of dermatology, in others it is associated with cutaneous lesions, and in the vast majority confined altogether to the skin, from the minute dimensions of the assailants, and their existence at all times, in all places.

The number of insects which exist in this part of the world, to the annoyance of humanity, is luckily limited, for the facility with which their proceedings can be watched, the opportunities they

afford for illustrations, and the little discrimination necessary for their detection and cure, render them favourite subjects for dermatological enquiries; the acclimatisation of a few varieties of mosquitoes or centipedes would result in some grand additions to cutaneous literature.

There are two great divisions of hostile Insects—those of Home and those of Foreign origin; and they may again be subdivided into those that attack man in common with animals, accidentally or in self-defence; those who live away from the body, only seeking that locality for the purpose of drawing nourishment therefrom, or for the sake of depositing their ova; those who live in the skin; those who penetrate more deeply into the tissues: those who make their home on the clothes, existing on the cutaneous exudations; and those who live and exist on the body itself.

The effects these insects produce are primary and secondary, and in some cases local and constitutional, and to the treatment of such effects, and the destruction of the insects when present, your attention must now be drawn.

You will not fail to notice, as you pursue your studies on this special point, the complacency with which some European cutaneous authors discuss and pronounce on tropical diseases, when all, or nearly all, their information is drawn from second-hand sources; whilst in cases that exist by thousands under their own immediate observation,

there is such a want of unanimity and such fertility of imagination.

We now come to the subject of animal poisons, for they form an important item in the results from insects at present under consideration; and you may remark that, though there is great discussion on the subject of serpent bites, for which all original antidotes are miserable failures, we do not know any internal medicine that will prevent the itching of a flea bite.

When insects sting in self-defence, or for the purpose of sucking the blood, there is often a certain amount of poison injected into the system, either as part of the process, or possibly as its accidental accompaniment. This is not the case when the cutaneous puncture is for the purpose of seeking existence within the body by the insect itself, or for the insertion of an ovum, afterwards to be there sustained.

The poison thus inserted may be concentrated and very noxious owing to its quality, or may be less deleterious and yet exercise constitutional effects, owing to the immense number of minute pests and their constant attacks.

The most virulent animal virus affecting the skin is that described as accompanying a slug in the Fiji Islands, which causes destruction of any cutaneous surface over which it crawls; whilst a fish found buried in mud and seaweed, at the Mauritius, causes not only cutaneous but most deadly constitu-

tional symptoms, if its spines penetrate the feet of any unfortunate fisherman or collector.

The above-named causes are confined to a locality, and you may never meet with a case produced by either; but scorpions and centipedes are common in hot climates, and the effects of their bites and stings may be taken as representatives of one class of cases, though scorpions are only adjacent to the insect genus.

Fatal cases from centipede bites are not common, but if we may judge of their possible effects on an infant by the results we see on adults, there is no reason apparent why they should not be fatal if the insect is large and in full vigour, and the sufferer just the contrary; whilst in any case of an insect sting the part attacked forms a serious item of danger, either from primary or secondary local reasons.

There are, first, the constitutional symptoms of great depression, and then there is the local pain and inflammation, first cutaneously, and afterwards of the tissues beneath, followed in many cases by large formations of matter. The cutaneous apertures left by the operation of the insect are so small that they do not lead to such secondary superficial effects as much less painful annoyances constantly produce. The poison is inserted too deeply to be locally much alleviated; to squeeze out any virus that can be extracted by pressure or a cupping glass, if the part permits, being all that is possible in this

direction. Internally, stimulants, either alcoholic or ammoniacal, are generally effective, whilst opiates may be advantageously employed to relieve pain. If suppuration takes place, the secondary treatment is that for an abscess.

Bees and wasps have both been fatal to men and animals. A recent case at home has just been published; and at the Marble Rocks, as described in the *Highlands of Central India*, there is a noted collection of Hornets, to the great torment and occasional destruction of visitors.

There has, in a hot summer or autumn, often been some discussion in the papers as to the presence of the real mosquito in England. The advent of this interesting fly would only be of importance if it brought its native virulence with it; gnats are sometimes very troublesome, and the mosquito is only a foreign gnat.

At Fraser River, the explorers were literally driven into the sea by the clouds of a species of mosquito, the only consolation being that it was found to be a new species, and named *Culex Pinguis*.

Marcoc describes the affluents of the Upper Amazons as haunted by nine different varieties, about the merits of which there is not much choice. The native skins are as rough as shagreen by the constant bites; and some tribes retaliate, by eating the mosquito distended by his meal, an unsatisfactory if nutritive retribution.

Flies, gnats, sandflies, midges, mosquitoes, etc.,

by whatever name they are called, have often, by their constant bites or stings, rendered life a burden, and progress in travelling almost impossible, from their annoyance to man and beast.

Those who have never visited a tropical region can scarcely estimate the result of such perpetual attacks; there are, firstly, the constitutional results of persistent injections of minute doses of poison; secondarily, the cutaneous symptoms. When there is such liability to abrade a spot, every abrasion becomes a sore, and every sore an ulcer. This is rendered irritable, and kept from healing by exposure, sun-heat, water, dust, etc., and by fresh attacks from insect plagues, now increased in number by the addition of all those harmless though irritating flies who quickly scent out a wound. This state of things occurring in places where all domestic necessities, to say nothing of medical comforts, are entirely absent, may thus produce, by causes apparently the most trivial, months of illness, of inability to walk or stand.

What a wonderful amount of annoyance and trial is expressed by Wallace in his *Malay Archipelago*, when he says, "Confined six months with a bad leg, from bites and dirt"!

Cold countries are not exempt from some of these pests, for Canadian midges and Archangel mosquitoes endeavour to make up for a long forced inactivity, owing to frost, by the virulence of their attacks; but even in the warmest moments of tem-

perate or arctic regions, there is never that abandonment of garments which is so favourable to insect hostilities ; nor do we find sleeping or lying on the ground unprotected from minute lurking enemies so frequently indulged in.

After all, clothes are the best and only useful protection against such attacks, for any external application to be valuable must be adhesive enough to adhere to the skin in movement, active and permanent in its deterrent principle, and innocuous if not agreeable to the skin ; and such an application is at present unknown.

The smoke of various combustibles, when from the locality available as a protection, is almost as bad as the evil it keeps away.

The insects of the genus *Æstrus*, which usually deposit their ova on the surface or beneath the skin of herbivorous mammalia, occasionally attack the human body. There have been a few instances of the gadfly (*O. Bovinus*) doing this in England ; in these cases there has been very little constitutional disturbance, the small tumours formed by the larvæ being easily evacuated of their contents. But abroad, man is more liable to such attacks, due, probably, to some varieties of the genus *Æstrus*, which do not exist here, and which give rise to symptoms of much greater severity. Humboldt says that he saw many Indians in South America with their bodies studded with tumours, caused by some insect's ovum ; and Wickham gives the follow-

ing curious description of what he himself endured on the banks of the Orinoco. He speaks of "a large headed worm (guoan), said by the Indians to be produced by the red mosquito. I think the Indians are right in considering it the larva of a gnat. Those Ramon extracted from my back had precisely the shape of the wriggling things to be seen in most rain water, enlarged, however, by the fostering heat of the flesh in which they were embedded. They also appear to breathe through their tails, as the head is buried, whilst the pointed tail end approaches the surface of the skin. Their presence is not noticed except when they feed (at least I presume so from my own sensations). The first time I felt them I could not imagine what on earth was the matter with me; it seemed as if some one was making a succession of thrusts into my side with a red hot needle. The operation of extracting the insects is tedious and painful. They are first killed by the fresh milk from the India-rubber tree, or tobacco juice, applied to the spot indicating their lodgings." The same author also speaks of the constitutional irritation and depression caused by continual mosquito bites.

The western tropical countries are also subject to the attacks of the *Pulex Penetrans*, *Jigger*, or *Chigoe*, which buries itself beneath the skin, generally under the toe-nails, where it increases in size as it proceeds to maturity, which is attained when it is replete with eggs. The only sensation is

that of slight itching; but as residents are aware of the significance of this symptom, it leads to the extraction of the insect; this is usually most carefully performed through an incision, and the application of very simple remedies causes destruction of the entire family. Tobacco juice, tobacco ashes, or a little gunpowder flashed in the opening are sufficient for the purpose; though if the insect is entirely extracted unbroken, nothing more is necessary. If left to increase and multiply, it gives rise to all the varied appearances and annoyances which an invader can produce.

The foregoing remarks are only examples of what insect plagues in foreign countries produce, not any attempt to enumerate even a limited number; fresh enemies are being continually described by travellers, though not often with the scientific luxuriance of dermatology, nor with sufficient distinct features to warrant separate classification if that were advisable. There are caterpillars, spiders, ants of all kinds, that have been said to be venomous to the human body, but the principles on which their evil results depend, and the treatment requisite, do not vary much. Constitutional depression must be met by stimulants, pain by opiates; locally, anything that can be removed must be extracted with as little disturbance as possible, anything left must be destroyed by caustics or actual cautery; subsequent irritation demands any soothing application, and much inflammation evaporating lotions.

You must never forget that when there has been any tropical exposure, there may be parasitic complications, which may cause sores or retard the healing of any sore already existing; and that in the worst cases your inventive faculties may be tasked by the limited number of available remedies.

Before commencing more domestic subjects, mention may be made of a statement by Vambéry, in his *History of Bokhara*, that people are there tortured by being thrown into a pit filled with sheep-ticks, and that these insects (*Melophagus Ovinus*) are fed, when not supplied with human subjects, by the carcasses of animals. The term Tick really belongs to the Acaridæ, whereas the so-called sheep-tick is one of the Hippoboscidæ. There are no details given of the result or progress of this novel mode of punishment, nor is there any literature on the subject elsewhere.

There are numerous varieties of ticks proper, that adhere to man and animals in their progress through tropical forests; and there are two home varieties of *Acarus*, that will afterwards have to be considered. A foreign variety of *Acarus* adheres most closely to skin, becoming distended by the blood it extracts; if forcible removal is attempted the parasite is destroyed, leaving its sucker in the skin; the proper application for such an adherent parasite, and for others such as leeches, is salt and water, when they quickly fall off. Water beetles, ear-

wigs, breeze flies, etc., will at times, and under special circumstances, puncture the skin sufficiently to make their presence felt ; but all insect home-annoyances are insignificant compared to those produced by Fleas (*Pulex Irritans*) and Bugs (*Acanthia Lectularia*). These insects, like all those previously described, live on vegetable matter or animals as a rule, only obtaining the human body as a luxury in the way of nourishment, and are sufficiently common to render any detailed remarks on their appearance unnecessary. The first effect of their bite is to cause a wheal to rise, a true urticaria ; the secondary appearance is that of a papule with a central puncture, or as a small red disc with a dark spot in the middle. Some have the presence of a bug, as yet invisible, made apparent to them by their uneasiness and inability to sleep ; these people are generally the insects' most chosen food ; others attract every flea, competing for their possession with domestic pets, the nurseries of insect annoyances. Many an infant has had a restless night from the mother's partiality to a pug or a tabby ; and whenever there is much cutaneous irritation in children, without apparent cause, examination must be made for it in such sources of origin. It is said that, a man lying naked on an isolated bedstead in an empty room, a bug being introduced, the insect, after carefully examining the scene of operations, walked up the wall, along the ceiling, and dropped on to the body. Whether this be true or not, these insects display a

marvellous appreciation of any human prey, and they, in common with fleas, may give rise to sundry complications from the irritation they produce. Some years ago, a man exhibited some industrious fleas ; he used to feed them on the back of his left hand ; the skin there ceased to be sensitive to their bites, becoming slightly thickened. At length there was considerable constitutional disturbance produced, which was very marked after each feeding ; headache, sickness, nervousness, inability to move the arm, were among the most prominent symptoms. You may never have a case in which you can separate any distinct features as arising from the poison of either fleas or bugs, but you may see cases in which children are covered with sores, either simple excoriations or slight ulcerations, for the cure of which, medicine has been given for many months, mercury, tonics, etc., and, as may be supposed, in vain. On seeing such a case, you must notice that there are no internal causes for such a state of the surface ; and if in doubt, the application of some strongly perfumed ointment will, by causing amelioration of the symptoms, show you how they have arisen. They are simply bug bites, which have caused small wheals, these wheals scratched by the child, either when asleep or on first waking, are converted into sores, the mischief being done, and the clue to its origin being broken, simultaneously. There is a powder sold as Persian Powder, which is destructive of various insect

plagues ; it ought to be the pollen of a species of *Pyrethrum*, found in parts of northern Turkey. If you obtain it at all pure it is very efficacious, but, like many other remedies, it is more often spurious than good. If sprinkled about garments or in a bed, it will destroy or disperse any latent foe ; and, according to Mr. Wood, its vapour is fatal to all bugs and cognate torments ; some more of which have yet to be mentioned.

LETTER XXII.

Phtheiriasis — Pediculi — Corporis — Capitis — Pubis — Treatment.

Acarus Autumnalis — Acarus Scabiei — Description of the Itch — Case — Prurigo — Pruritus — Causes of Pruritus — Treatment of Scabies — Guinea Worm — Treatment.

SIR,

The term Phtheiriasis is used to describe the presence of lice on the skin or scalp, these parasites obtaining their nourishment from the surface or its exudations.

You may see or hear of bites from lice, but such are purely imaginary, as the lice do not penetrate the skin, and may exist in thousands without one mark on the surface to denote their presence, other than the result of scratching, and sometimes the irritation they cause is so little that this mode of alleviation is but slightly practised.

There are three varieties — the *Pediculus Corporis*, or body louse, which breeds on the clothes, and wanders over all parts of the body but the head; the *Pediculus Capitis*, or head louse, which lives and breeds on the scalp only; and the *Pediculus Pubis*, or crab louse, which breeds on all the hair but that of the scalp.

These lice are all provided with six legs, terminating in a claw like a large lobster claw, with which they are able to grasp the hairs and move with facility over the body, their movements giving rise to considerable irritation.

The *Pediculus Corporis* is one or two lines in length, and is larger and pinker than the other varieties. To this parasite may be attributed the origin of the name of *Prurigo*. Living and breeding on the clothes, whilst its presence as a cause of irritation was sought for on the body, the irritation was attributed to nervous disorder arising without a cause. Applications on the body not being effectual except as causing the lice some annoyance, this view was confirmed, and unfortunate patients have had to take arsenic, bromide of potassium, etc., to cure them of a disease which really consisted of dirty garments or want of cleanliness.

Like other parasites, vegetable or animal, body lice require for their full development prostration of the vital power, and with a certain amount of cleanliness this condition is most favourable to their multiplication. An excessively dirty skin is somewhat of a protection; but when old and feeble individuals are either dependent on others for the purity of their garments, or are not able from circumstances to obtain a proper and frequent change of clothing; when their ablutions are limited, and their food deficient; lice appear instinctively to know that they are a ready prey, and then

they come most wonderfully, whence no one knows, and when once established they are difficult to eradicate, from the necessity of thorough cleanliness and destruction of their ova. This thoroughness is not often complete, possibly from some serious illness, more frequently from the impossibility of changing the surrounding influences without which the parasite would not have come. You see an old man, with some attempt at respectability, who has a horror of lice ; you destroy, or tell him to destroy, by heat, such as a stove or boiling water, all the ova, and to make a complete change of everything. He does so, and is relieved. You may even, if you think that some medicine must of necessity be ordered, give him a tonic, to increase his appetite when he has nothing to eat, or order some sulphur bath or ointment, instead of a good hot bath and plenty of soap. He then returns to his former abode and mode of life, a case of incurable Prurigo, for the effect of all your directions is to give a temporary check to the increase of the lice, and that is all. If you find that there is not even temporary relief, you will find on enquiry that *nearly* all the garments have been changed, or that there is some hot-bed of the parasite left untouched.

All histories of lice breeding in the body, or arising spontaneously from it or its surface, are entirely fabulous, though where crusts or folds on the skin exist it is possible that some of the

ova may have been there collected before their maturity.

It is possible to reduce the vitality so low that the irritation of lice shall be unfelt. This can be effected by salts of potash, and possibly other substances, but the bromide of potassium is the favourite remedy for this purpose, and a case published some time ago, headed, "Cure of Prurigo by Bromide of Potassium — subsequent death from carbuncle," shows what can be effected in this direction.

Strongly scented ointments of various kinds are also effectual in checking lousy wanderings, and to that extent serviceable in reducing the irritation. We shall have to consider the conditions under which Pruritus arises later on.

Huc, in his *Travels in Thibet and Tartary*, states that by making a rude sort of blue mass with mercury and grease, and suspending a lump of the same round their necks, they obtained relief from the irritation of lice, for these parasites could not resist biting the mixture, and its effects were fatal. You will find that this metal is, in any form, very destructive to lice of all varieties ; but the preparations combined with grease are either very dirty, or very irritating if there is any abrasion of the surface, and though a good application of blue ointment to the hair is a very rapid and successful method of destroying the next variety, *Pediculus Capitis*, or head louse, yet milder and less rapid

methods are preferable, especially in children. The *Pediculus Capitis*, which is not quite so large as the body louse, confines its existence to the scalp, where it breeds rapidly, running about in the hair with considerable activity.

When the hair is matted, from want of cleanliness or from eczematous discharge, the lice are in great prosperity, and their eggs may be seen attached to the hairs like granules of gum, which are nearly as large as a swan shot if the parasite has attained its full growth. Once introduced into a family, every member of the household may participate in the nuisance, from absolute want of suspicion on the subject. For the amount of itching they occasion is very slight at first, and is never very intense. A French writer suggests that it may not be advisable to destroy lice at once, on account of the benefits derived from the local irritation; this opinion need not, however, deter you from as rapidly destructive measures as possible, for the requisite amount of scratching to meet even the above view can be as well attained on a clean as on a dirty scalp. When there are many crusts they should be removed by a poultice, and then proper applications used. These are, a comb, soap and water, Stavesacre ointment, alcohol in some form, and preparations of mercury. For a child, where the scalp can be kept frequently anointed, the Stavesacre ointment is the best and safest remedy; it can be used *ad libitum*, and left under the control of a servant without any appre-

hensions. It does not, however, destroy the eggs, though it renders their detachment from the hair more easy by ablutions. If, therefore, you direct the head to be well anointed with this preparation every night, well washed and combed every morning, a little whiskey then applied, which assists in drying the hair as well as in destroying the ova, and then the ointment freely laid on, you can be sure that in a short space of time the scalp will be free. If you have to treat an eczematous eruption as well, the oil of Stavesacre can be mixed with zinc ointment. Solutions of bichloride of mercury are more rapid and agreeable, and better suited to the long hair of females; they are much increased in efficacy by containing either glycerine, gum or syrup, which retain the liquid on the individual hairs in spite of their oily nature. One application of blue ointment, allowed to remain on for twenty-four hours, will destroy entirely every pediculus, whether of the head or of the pubis, and either this preparation or the solution of bichloride is usually the means by which the pubic parasite or crab-louse is exterminated. These lice are flat and broad looking, somewhat like miniature resemblances of the crustacea, after which they are named. They are usually found on the pubis, but may spread over all the hair of the body but the head. When on the eyelids, they give a shining metallic appearance to the spot, and their presence is everywhere easily detected by the small oval nits

or eggs attached to the hair, and in some places by a small pink deposit on the skin, said to be caused by their exuviae. You will find these two marks very useful for the detection of this pediculus, where the parasite itself cannot be easily found, and a few hairs may render a more minute investigation unnecessary. This louse adheres closely to the base of the hair, and from its hard smooth surface is not easily removed from its attachment. The irritation these lice cause is frequently very slight, at most only felt for a few minutes during the day; and they may invade every part of the body before such sufficient attention is called to unusual itching as to lead to their detection. On the other hand, they may cause intense annoyance from the severe Pruritus they occasion, and from the inconvenient localities attacked. You must not forget the possibility of there being a cause, nor that they may be bred by some domestic animal originally. Any preparation of mercury destroys them; white precipitate is a popular remedy, calomel is more potent, and the blue ointment still more rapid; lotions are more cleanly, but not so rapidly efficacious.

There are two more parasites, of a different order, the *Acarus Autumnalis*, or harvest bug, and the *Acarus Scabiei*, or itch insect; and these will, with the Guinea Worm, conclude the subject of animal annoyances. They are the home representatives of the large family of Acarides or Ticks, and the only ones necessary to describe. The *A. Autum-*

nalis is common during the autumn months, whence its name of harvest bug. It is a minute parasite, which crawls up the legs and over the bodies of those who are much in the fields at that period of the year, and who are unprotected by clothing. It does not penetrate the skin itself, but inserts its haustellum, and from the irritation there arises a certain amount of erythema, or urtication, that varies greatly with the individual. This parasite adheres very closely and firmly to the skin, but is easily destroyed by some dozen household remedies, such as vinegar and oil, or sal volatile and water.

The *Acarus Scabiei*, or Itch Insect, has been the subject of as many illustrations as a reigning monarch, and of as many medical articles, controversies, enquiries and experiments as the largest animal extant or extinct that has ever been described, and all this has been done in consequence of its causing a disease called Scabies, or the Itch, which can be cured with the greatest ease and certainty in a few days. This *Acarus*, which belongs to the Arachnida class, is about $\frac{1}{120}$ to $\frac{1}{75}$ inch long, the male being smaller than the female; the former merely runs on the skin seeking the female, and hiding in any cover that is present; and of all such protections, none is more favourable to his operations, and consequently to the spread of the disease, than dirt. As soon as the female reaches the skin she commences to burrow, at first quite perpendicularly to the surface, afterwards, when completely

hidden, parallel to it, forming a small canal, in which she deposits her eggs, and then dies.

The eggs come to maturity and to the surface by the ordinary exfoliation of the epidermis about the same time; a week later they change their skin, become impregnated, and take their course downwards into the skin, to become fresh centres of disease. The epidermis over the canal, or properly constituting its roof, is perforated or rendered capable of admitting air, which is necessary to the parasites' existence. All the above processes are carried on with greater facility if the skin is soft and warm; and the more tender spots are those on which the eruption of Scabies is first seen. The proceedings of the *Acarus* give rise to sundry appearances on the skin, with which it is necessary you should be perfectly acquainted, for the Itch may complicate any other cutaneous affection, and unless its presence is detected may occasion a considerable amount of annoyance.

The various forms the eruption takes are papular, vesicular or bullous, and pustular, and all these forms are varied and complicated by the scratching produced by the intense irritation. You have here two marked features in this disease—the itching, which is checked by cold and greatly increased by heat, and the existence of several of the above forms of eruption, at one and the same time. There is less or even very little itching where the disease at once assumes the pustular form, and when it is kept

in check by constant ablutions; for instance, you may see it on the fingers of a child in the form of a solitary tolerably large pustule, with little itching; in this case you can at once determine the disease by there not being sufficient surrounding, or subcutaneous inflammation to account for the pus, which, moreover, is not merely serous exudation, afterwards becoming purulent. The ordinary form in which Scabies comes before you, will be in that of papules, more or less destroyed by scratching; thus, if the body is attacked, you will see dark spots of dried blood, abrasions taking a linear form, and amidst these some papules, red or pallid; if you see to any one of these a short tail of inflammation, you can at once be sure that it is Scabies, and can obtain absolute proof by extracting from the end of this tail, which marks the canal made by the parasite, that cause of the eruption; this is very easily done with the point of a pin, on which the *Acarus* may be seen like a small scale. If the case is one of recent origin, Scabies is seen more frequently on the hands, where it is seated between the joints at the base of the fingers, in which soft integument it burrows easily. If the hands are hard and horny, or if they are much in fluids obnoxious to the *Acarus*, you will find it nearer the body round the wrists.

The eruption is papular, vesicular, or even pustular; but when it has long existed there is a general exfoliation of parts where the disease has

passed, the epidermis looking undermined and loosely attached. You will notice that this disease generally arises, both in the adult and in children, on those parts most likely to come into contact with the source of the contagion; in infants the buttocks, where they rest on the arms or hands of others, are the localities generally first attacked; in women suckling, the eruption is often seen first on the breasts, if they acquire Scabies from the infants they nurse. The face, from its exposure to cold and ablutions, is generally free from Scabies. When once the *Acarus* is firmly established, the inflammation to which it gives rise may take some forms unusually definite; the most perfect specimens of Eczema are thus caused by it. The hands and arms are then swollen, bright red, glistening, with vesicles perfect and ruptured, and studded with detached epithelial scales, the whole forming a brilliant specimen of moist inflammatory exudation, which is too sore to be scratched. At the free edge of this inflamed mass you will be able to see the papule of Scabies, which at once gives the clue to the disease, and you may also recollect that there is no local acute Eczema from any other cause which has such appearances. The pustular form of Scabies is very common, but certainly not nearly frequent enough to cause this affection to be considered a pustular disease. You may also have Scabies as large bullæ, with semi-purulent or serous contents; the greater the exudation the less the irritation. You may occasionally

meet with Scabies, which some immature dermatologist has called Prurigo, and treated according to his conception of this disease and its requirements. These cases are interesting, for they show what the course of Scabies is when checked only by cleanliness. For instance, a person with boils on the arms complained of an eruption between the shoulders, the upper extremities being free from anything but a few furuncles. On examination of the back, there are seen elevated papules without any inflammation, which it is perfectly evident can be nothing but the consequences of *Acarus Scabiei*. The assertion that she has the Itch is received with great incredulity, and leads to the information that she has had Prurigo for six months, beginning on the hands, and that the itching, gradually leaving them and going up the arms, finally has reached the back and shoulders. For this so-called Prurigo she has been taking arsenic, etc., and used innumerable baths and ablutions, besides continual change of garments, under directions given, two or three times every week for six months. There can be no doubt that the *Acarus* had had a most unhappy time, but still has managed to exist under all difficulties. To satisfy the patient, a little of the epidermis was scraped off the upper arm, and, on being placed under a microscope, a dead *Acarus* and some broken remains of others were at once visible.

Scabies is caused and spread by contagion, the *Acarus* being easily transplanted; but you must

never rely on the case being solitary, though if there are many affected in a family it is a valuable corroboration of other signs. A man covered with Itch may sleep by the side of his wife for a fortnight without the female catching it, though the surroundings may be apparently eminently qualified to assist in spreading the disease; on the other hand, every member of a large household may be attacked without one strongly marked case, even where the utmost cleanliness is a matter of course. An author who is great in predisposing causes, proximate and remote, gives robust health as one such cause of Scabies. It requires a "happy thought" to perceive the meaning, which, however, can only be that robust people frequent itchy localities. As a general rule, any eruption that itches violently, such itching being brought on or increased by heat, is Scabies; if there is any doubt, the *Acarus* or its traces must be seen under a microscope, but as you become accustomed to the appearances of Scabies you will rarely need this instrument.

There is an able and interesting work on Neurotic Diseases, in which, amongst others, Prurigo is mentioned. In the sense in which language is generally used, there are no such diseases, or else all diseases are neurotic.

Pruritus, of which Prurigo is considered an aggravated form, may occur without any apparent cause, but that is because we do not see where the

cause is, not that it is wanting, or that the nerves have acquired unusual activity *per se*.

Prurigo was formerly described as colourless, or white papules; this theory is, however, apparently abandoned by the pruriginous authors of the present day, and these papules attributed to scratching. Itching is not necessarily the result of change in the locality itself. If an *Acarus* attacks the hand, the itching is not only felt there, but there is considerable irritation over the arm; if the menstrual flux is checked, there is often intense pruritus at the orifice of the vagina; the presence of piles produces pruritus at the anus; all these have been called at different times Prurigo. On getting warm in bed, if owing to circumstances your usual daily ablutions have been omitted, you may feel Pruritus in different parts, and be surprised at it, but it is only the warmth causing the skin to relax; and in the spots where the sebum has hardened, or where there is a minute hair entangled, this expansion is slightly checked, Pruritus being the result. There is often intense Pruritus before a syphilitic eruption of the palms of the hands or soles of the feet; on examination nothing can be seen, but the subsequent inflammation shows clearly that changes of structure have taken place, invisible on the surface, and that the Pruritus has been caused by such changes. The pain of Herpes is only aggravated Pruritus, and the rash is not caused by such pain, but the nervous irritation is consequent on the

changes that are taking place antecedent to the rash.

You have seen that in Pempfigus a large effusion of serum may take place without any inflammation; also that, in specific disease, intense irritation may precede the appearance of any eruptive sign; if, therefore, a large bleb can be found without redness, a slighter effusion only sufficient to raise a papule may exist, and the little enlargement so caused may be accompanied or preceded by itching, which will then be the papule formerly described as the white papules of Prurigo; whilst the eczematous rash, commonly said to be the consequence of scratching, is only the fuller development of an exudative disorder, increased no doubt by the friction, but still having a separate cause. In old people there is often irritation caused by capillary growth in follicles previously closed or obstructed by sebum, this is another cause of Pruritus.

The above examples are given to show you the class of causes you must look for when there is Pruritus without distinct external alteration of structure. It is unnecessary to go into greater detail, for it is like fighting a shadow. When the disease is an imaginary one, like Prurigo, the only limit to its literature is in the writer's luxuriance of fancy. Such a disease is a profitable one for the druggist, for, as it does not exist, it cannot be expected to be cured, and the prevalence of this

opinion justifies the administration of drugs and medicines wholesale.

When you are satisfied that you have a case of Scabies to cure, the operation is very easy and successful. There are only two remedies required: sulphur ointment and storax ointment. The former was combined with other things in the old Pharmacopœia, and has been termed a villainous compound by a writer, who recommends in preference a compound of mercury and sulphur, which is in every way inferior and anomalous. If the patient is an adult, he should take a bath, and be well scrubbed in soap and water, the sulphur ointment must then be well rubbed in, all clothes that are washable must be boiled, bed and bedding and garments not suitable for this treatment must be stoved, and the *Acarus* is exterminated.

You have at the close of this Letter a copy of a printed form in use at the Dispensary. If the patient likes, a paste of sulphide of calcium can be laid on, and a few hours with one application does the business. If the patient is a child, or has an objection to sulphur; or if there are other eruptions; or circumstances such as the administration of mercury, which render the sulphur treatment inadvisable, the storax ointment answers equally well; it is soothing and agreeable to the skin, and does not occasion any of the irritation which sometimes follows the use of sulphur. You must again be warned that Scabies may complicate any disorder;

that if not present at the commencement it may arise during the case, and that it will not be creditable either to your intelligence or your observation if you allow the disease to spread.

The *Filaria Medinensis*, *Dranunculus*, or Guinea Worm, concludes this notice of the animal enemies of the body. This worm is excessively common in some Eastern countries, in districts where it exists in the water or in damp places; inserting itself into the body at first as a minute thread, it gradually increases in size and substance, without giving any symptoms of its presence, until its peregrinations cause some inflammation, apparently accidentally, and the swelling and suppuration show the insect as a white cord, of which a loop or extremity presents itself to notice. If you have ever to treat many of these cases, you can verify the assertion of Dr. Horton, that the exhibition of assafoetida is an infallible cure for this worm. The treatment generally adopted is to draw out and wind upon a card as much of the insect daily as it is possible to draw out without breaking it, until all is extracted, a process which is facilitated by any inflammation around the worm, for this result appears to be hostile to its existence or resisting power. When once out, all the symptoms of the presence of a foreign body quickly disappear.

DIRECTIONS.

1.—Scrub the whole of your body, except the head, as firmly as possible, without hurting yourself, with black soap and water.

2.—Sit in a bath for twenty minutes, or, if you cannot get a bath, wash yourself with hot water thoroughly.

3.—Rub some of the Ointment well into the skin of the whole body, except the head, for twenty minutes. Let the Ointment remain on the body all night. Repeat the processes every night for three nights, and then return to the Dispensary.

4.—Change all your clothes and bed linen. Put all your washing clothes into boiling water. Iron all others thoroughly with a hot iron, and expose them to the air for a few days before wearing them again.

LETTER XXIII.

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- Ulcers — Causes — Standing — Pressure — Results — Exudation —
 Hæmorrhoid — Eczema — Ulcer — Irritable — Indolent —
 Treatment — Bandages — Repose — Difficulties — Evident —
 Formidable — Transplantation — Differences of Method —
 Objections — Real Facts.
- Warts — Locality — Causes — Syphilitic — Dead Bone — Description of Verrucæ — Varieties — Cold — Warmth — Irritation —
 Constitutional — Treatment — General — Local — Constitutional —
 Corns — Formation — Callosity — Clavus — Description — Growth — Causes — Soft Corns — Treatment — Excision —
 General.
- Nævi — Vascular — Varieties — Portwine mark — Araneus —
 Reticulatus — Congenital — Treatment.
- Pigmentary Diseases — Causes — Lentigo — Melasma Figuratum —
 Melanoderma — Leucoderma — Treatment — Conclusion.
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SIR,

Chronic ulcers of the lower extremities are amongst the most common disorders of the lower classes; and as your experience enlarges, and you see the more severe cases, you may perhaps wonder how people can work, or even walk, with the sores exhibited at public charities.

These ulcers are amply mentioned in works on General Surgery; but recently a new mode of

treatment has been suggested, and that you may appreciate this mode at its proper value it will be necessary to examine the causes and treatment of ulcers generally.

All persons who pass years of their lives in a standing position are liable to ulcers on the lower extremities; women who have borne children especially so, from the interruption to the free circulation which pregnancy occasions. When persons stand, or only move about the house, for hours, day after day, year after year, the heart's action, unassisted by exercise, is unable to circulate the blood properly through the lower extremities. The constant pressure of this fluid then leads to the following results: 1st, the aqueous parts of the blood exude, causing œdema of the feet, ankles, and legs; 2nd, the veins dilate, and the valves then being useless these vessels become varicose; 3rd, the white corpuscles, increasing in number by the retardation of the current, obstruct the capillaries, generally giving rise to eczema of the skin, with its usual consequences.

All these three results may be present at one and the same time, or one or other may preponderate. At length, at some point the blood ceases to be circulated sufficiently rapidly to keep up the necessary vitality of the skin, the corpuscles die instead of renewing the structures they ought to repair, and they, with the substance of the skin, are removed, partly by absorption, partly by exudation,

entirely or partially ; you then have that loss of structure called an ulcer.

Whether this ulcer is indolent or inflammatory, painful or painless, healthy or unhealthy ; whether there are many or no granulations ; great or little discharge ; depends entirely on the quality of the blood, and the greater or lesser force with which it is propelled.

If the patient is very old, nature may make no effort to repair, in which case no extra quantity of blood is sent to the part ; if the patient is comparatively young, an excessive quantity may be sent ; either of which occurrences is incompatible with proper reparation. In the first case, there are no materials to repair the loss ; in the latter, their excess causes stoppage of the current.

The treatment for ulcers is to soothe the irritable, to stimulate the indolent, to reduce excessive inflammation by warm applications, such as poultices, and to support the extremity by outward pressure. If the granulations are few, weak and flabby, or if they are numerous and exuberant, stimulation by destruction of these granulations is proper, the object being to induce proper circulation, both as to quantity and as to rapidity.

Support is given by bandages, that the circulation may be rendered more equable and forcible. This is not advisable when much inflammation is present, nor when the ulcer is on a prominence, otherwise, by restricting the channels it increases

the current. In addition to this, the stagnation from excessive pressure is to be taken off by the patient lying down.

The difficulties attending a cure are—the inability or the unwillingness of the patient to repose, and to alter his manner of life, the origin being standing and want of exercise.

There are other complications frequently present as deviations from health, and these may be rendered worse by the rest for a time generally necessary. These complications are part of the original causes which led to the ulceration, and they require attention to produce a successful termination to the case.

These difficulties are simple, obvious, and yet very formidable. If the patient will follow your directions as to habits, and steadily adhere to them, it may be possible to cure a case without any laying up; if he does not so obey, however you may treat him, the ulceration will either never be cured, or being cured will certainly reappear.

Experience will teach you, on seeing an ulcer, the proper treatment. Daily careful dressing of the ulcer by yourself, and, if necessary, daily alteration of the remedies, is very essential to a rapid cure.

Bandages require very nice application. They should be of flannel, and of two sizes, or graduated so that the foot and leg are both properly and equally compressed.

A new and simple plan for the cure of ulcers

was stated to be the removal of some portion of sound skin, and this was to be planted in the ulceration, which would forthwith heal.

It did not appear to be decided whether the sound skin was to be removed in its entire thickness, or if a superficial portion would do equally well; nor was it quite clear if the skin so removed was to be inserted in an incision in the ulcer, or simply apposed to its surface. In any case, the cure was certain, and its efficacy was great in syphilitic ulcers equally with passive ulcers.

The pleasure with which so original an idea was received by the profession was somewhat diminished by the consideration, that a cure was seriously stated which left entirely untouched the cause of the disease; and also why, if one spot hastened the cure, a dozen did not produce more rapid results. But if you follow most minutely all the directions given for successful transplantation for the cure of ulcers, you will come to the conclusion that it is entirely useless.

The facts are simply these, that if an ulcer has filled up, and shows a disposition in every way to heal, except actually forming an epidermic coating, it may sometimes be induced to commence this formation, at a part away from the surrounding skin, by the apposition to its surface of some unirritating congenial substance, or by the formation of a clot; but a piece of skin off a leg of mutton, or a piece of gutta-percha, answers equally as well as human

integument, when either will do any good; or even a layer of collodion, though the value of this preparation, simple or medicated, is usually very little.

When the circulation is languid, and when it is unduly determined to certain localities, either by heat or irritation, instead of the excess of white corpuscles being thrown off as an exudation, it sometimes causes hypertrophy of the papillæ of the skin, producing what is commonly known by the name of warts, or Verrucæ. These are found generally on the hands, genitals, or mucous membranes, being favoured in the one case by undue cold, exposure, and the mechanical relations of these extremities; and in the other cases by the excess of warmth^{*} and great vascularity. They are sometimes associated with the syphilitic poison, but they have no special relation to that virus, beyond the conditions above stated.

Verrucæ are also found on the skin, over or near diseased bone, especially when that causes a small fistulous opening; and you must not forget to examine for such a cause when there is excessive papillary hypertrophy.

Warts are seen either as flat sessile elevations of the skin, in which the base is as broad as the apex, as pedunculated excrescences, or as masses of associated papillæ covering several square inches, presenting on the surface of the masses a corrugated appearance, from imperfect junction of the several bundles of which they are composed.

These bundles are sometimes easily separable to a considerable extent ; at other times they are closely attached from base to summit, being only rugose on the surface.

The enveloping tissue of *Verrucæ* may be soft and tender, easily bleeding, or covered with a slight moist exudation ; or they may have extra epidermic layers, and be somewhat harder than the surrounding skin, and then the top is occasionally broken up like the stump of an old brush.

It is scarcely necessary to point out that the number of white corpuscles is relative, that one person may have many more than another, without any deviation from health in either case ; nor to state that the results of alteration in the circulation of such given number of corpuscles depends on their vitality and the quality of fluid that surrounds them. Bearing these facts in mind, you will see that the formation of warts results from, in one case, the circulation being retarded by cold, in another in being rendered excessive by warmth, both these alterations in temperature being relative to the remaining portion of the skin ; whilst the irritation caused by a diseased bone leads to excessive surrounding hyperæmia, unrelieved by exudation, this hyperæmia then forming either warts or fungous growths indifferently, one being a slower formation with epidermis, the other being more rapid and without that coating.

Warts may grow about the scalp and face in

great numbers ; they then denote obstructed circulation internally, and are usually seen on adults or aged people, and are precursors of some form of eczema, if the conditions adverse to health continue to increase and take the form of a cutaneous lesion.

Such being the causes of warts, to cure them you may adopt constitutional or local measures, the latter often being sufficient. Thus if you keep cold extremities warm you prevent warts, and equally so if you can keep warm parts cold ; but it is not so easy to do the latter as to do the former. If warts are pedunculated, a ligature or a pair of scissors quickly removes them ; if they are numerous, however, you have to resort to other measures. These measures are—to apply caustics, such as liquor potassæ, liquor ammoniæ, or acetic acid, or to cause them to inflame by lotions of a milder class, acetate of lead, etc. ; the inflammation produces obstruction of the capillaries which nourish these growths, which then fall off.

Some applications combine both a solvent and inflammatory action, but if you have large masses of papillæ to deal with, they are neither readily caused to inflame nor easily dissolved. For these, and in fact for all warts, there is no better application than equal parts of hydrochloric acid and tincture of iron. By this a mass of papillæ may gradually be removed, the dead part being peeled off in layers at intervals of a day or two, during which process the papillary formation will be constantly

apparent, whilst diffused or solitary warty growths rapidly disappear. If, however, the growth of the warts depends on some dead bone or tooth, with the removal of the cause the excrescences quickly disappear; and a dead tooth is an important cause, which sometimes leads, when undetected, to months of treatment and a gloomy prognosis.

To treat *Verrucæ* constitutionally, arsenic is useful; it quickens and renders more equal the circulation; but it is seldom necessary if your patients, when languid, having food to eat, can be induced by tonics to eat more, or if plethoric can be persuaded to eat less.

Certain portions of the skin, which are liable under the usual conditions of existence to be subjected to more than ordinary friction, are formed naturally with a greater development of the epidermis; and where the call for this protection is great, the formation on these portions assumes an extraordinary degree of thickness and hardness. Any part not so protected, being exposed to friction, an increased flow of blood is caused in the capillaries, and as a consequence of such extra supply, there is increased epidermic formation, which constitutes a Callosity. It requires, for the development of the hard horny patch which goes by this name, that the supply of blood should be so gradual that there is neither fluid exudation which would cause a blister, nor complete obstruction of the vessels when all formation is arrested.

During the process of formation of a callosity, either simultaneously with the thickening of the cuticle, or at some period of its growth, one or more papillæ may become hypertrophied, and from such papillæ the growth of horny matter proceeds with greater vigour and with increased density, whilst the base, slightly elevated above the adjoining layers, being attached to the true skin, where there is increased sensibility, there is then an element of tenderness imparted to the otherwise insensible callosity. The callosity and hypertrophied papillæ constitute a corn or *Clavus*. We thus have, in an ordinary hard corn, several densities of texture, the softer layers next the sound skin, the mass of the corn, faced on the outer side with a harder layer of ancient date and greater exposure, and imbedded in the whole still more horny processes connected at their base with the papillæ. As a consequence corns are very sensitive to any variations, hygrometrical or otherwise, that expand or relax the skin generally, for the surface being moved causes the corn to act with a leverage on the tender base of the papillary formation, or roots as they are also termed.

As the process of growth of a corn takes place when there is superficial pressure, the hard mass is driven into the skin, and in course of time the direction of the layers relative to the surface becomes somewhat altered; the soft parts beneath may also become absorbed by the pressure, with or

without suppuration and ulceration, whilst common inflammation of the surrounding surface, and of the bursæ of adjacent joints, is of frequent occurrence. A small bursa may even be formed beneath the corn itself, and under certain circumstances discharge through openings in the latter. A section of a corn shows it to be of a double convex shape, the outer curve being greatly flattened, and the inner rendered very conical. The actual causes of corns are too well known to need description; they may, however, be found on the hands, shoulders, etc., as well as on the feet. Soft corns are caused by the friction of one toe against another; the exterior of the substance then formed, being soddened by perspiration, is soft instead of hard, and the roots also are of less consistence.

The treatment of corns is generally left to people called chiropodists, if any aid is required; though if they caused a blemish to personal appearance, instead of simply pain and discomfort, more scientific assistance would be requested. If your opinion should be asked, you can recommend strong acetic acid as an application: it is the active principle of so-called corn solvents; or you may remove the corn itself. This should be thus done. The circumference of the corn should be clearly defined and detached from the sound skin with the point of a knife, the separation should then be gradually effected by tearing or dissecting the hard part from the soft surface beneath, not by cutting, until you

reach the roots, which will require digging out, and perhaps finally a few touches of the knife. The roots are rendered very visible by a few drops of spirit. If done successfully, there will be presented a smooth red depression, at the base of which there are one or several lesser and deeper holes, the surface being free from any hard matter, and perhaps a few specks of blood where the papillæ have been severed from their attachment or base. Soft corns may be removed with a pair of scissors; a piece of lint moistened with glycerine will effectually prevent their recurrence, but cleanliness in removing dirt and perspiration is of importance. Tramps strongly object to any ablutions, which soften the skin of the feet, and render these unable for a time to resist outward influences; and the bath, which is generally ordered at all houses of refuge as an absolute preliminary to relief, is detrimental to their career. In such persons the skin of the feet becomes very thick, and any inflammation or exudation beneath the excessive epidermic coating is rendered much more painful by its inelastic and impervious nature.

Children are sometimes born with a mark on the skin, caused by a general dilatation of the capillaries, which gives to a tract of more or less extent the colour of port wine,—this is called *Nævus Maternus*, or mother's mark; it is not raised above the surface, and varies slightly in colour with the force of the general circulation. At birth, or at any subsequent period, the capillaries of the skin may

become distended, either from the constitutional causes of weakness or obstruction to the circulation, or accidentally ; and those capillaries may radiate from a centre, like a spider's web, called *Nævus Araneus*, or may be more reticulated, *N. Araneus Reticulatus*. If the causes are constitutional there is more than one such capillary formation ; if accidental, possibly only one. The central spot may also be more or less enlarged, and be either simply the confluence of several capillaries, or be distended into a little raised globular sac.

If the colour of Nævi is bright red they are called arterial, if bluish venous, though as they are all capillary the distinction is not very evident nor material.

Nævi may also be very large and prominent, resembling half a blue orange on the skin, and if their capacity alters with the circulation there is an inequality in their distension resembling the changes of erectile tissue. These very large Nævi are usually congenital, but a varicose condition of the capillaries may accompany any morbid growth, and form a considerable element in their constitution.

The treatment of Nævi which appear gradually, and continue to appear, is constitutional, and arsenic is the proper remedy ; if accidental, they may, if small, be destroyed with the greatest facility by the galvanic cautery ; if large, they should be tied with a multiple ligature ; breaking them up by the insertion of a needle, or having a thread passed

through them to excite sufficient inflammation to cause obstruction of the vessels that supply them, and so destroy them, has been recommended, but both these methods are dangerous and useless, especially for large nævi ; pressure has also been recommended, but it can be rarely so applied as to be successful.

For mothers' marks nothing but destruction of the skin is available, and the remedy is generally worse than the disease.

The pigmentary matter which gives the dark tint to negroes and to other tropical races, is deposited in whites only in certain limited regions. Of what this matter consists nothing is satisfactorily determined, except that it is a highly carbonised substance. In certain diseases, the exudations of the blood give various tints to the skin ; the actual healthy circulation, or a circulation loaded with bile, also cause shades of red or blue by the former, of yellow by the latter. Pigmentary granules once deposited are very permanent ; why they should be secreted we do not know ; discolorations from other determinable causes than pigment are not so permanent, but may nevertheless exist for years.

The chemical changes that take place are beyond our investigation. The various compounds of sulphur, iron, or carbon, that may cause an alteration in colour, are very numerous ; and from the colour we have no means of knowing whether it is due to actual formation of ordinary pigmentary matter,

or to some other change presenting the same hue.

Sun-heat causes excessive formation of pigment. Warmth causes discolorations without these being necessarily pigmentary or permanent. Any excessive irritation, such as results from the application of a blister or a mustard plaister, will have sometimes the same result.

When you have a brownish mark on the skin, if it is small and of some determinate shape, it is called *Lentigo*; if larger, *Melasma Figuratum*; if universal, *General Melanoderma*.

Melasma Figuratum sometimes takes various semicircular or oval shapes, which may render it very marked, especially on the face; the edges may be clear and distinct, and from these edges the colour may shade away; or a patch of clear skin may be enclosed; or a dark line may exist with no definite edge.

The reverse of all these appearances may be seen in patches of unusual whiteness, called *Leucoderma*; with these there must be deficiency of circulation in addition.

There is no treatment of any use for any of these chromatic diseases. Local applications are of no avail, to remove even the temporary stains of syphilis, in which the exudation of hæmatine is the colouring matter, and this is a substance that is in time absorbed. Absorption will equally remove a great many other discolorations, but if carbon is

deposited in the true skin there is no action which touches it at all.

Constitutional remedies for simple discoloration are entirely wanting. In certain diseases there is discoloration, but the treatment is for the disease, not for the colour.

We have now gone over the principal affections of the skin that you are likely to meet with in ordinary practice, the various drugs and preparations that you will most probably require, the various forms in which they are administered or prescribed, and baths remain to be noticed.

The next Letter will be devoted to these subjects as they bear on cutaneous medicine.

LETTER XXIV.

Baths—Bathing—Hydropathic—Ancient—Action of baths—Necessity—Effects—Turkish—Baths at Watering Places—Baths for Excessive Perspiration.

Soaps—Varieties—Selection—Powders—Pomades—Ointments—Benzoated—Sulphur—Storax—Stavesacre—Oil of Cade—Iodide of Sulphur—Mercurial—Cantharadine—Various—Embrocations—Rubefacient—Lotions—Stimulant—Rubefacient—Chloral—Astringent—Benzole—Hyposulphite of Soda—Sulphurous Acid—Oil of Cade and Iodine—Mixtures—Bichloride and Iodide of Potassium—Acid Iron—Carbonate of Iron—Ammoniated Tincture—Mercury and Soap Pills—Arsenic and Iron Drops—Collodion—Cod Liver Oil—Conclusion.

SIR,

There are not a great many remedies necessary for the treatment of cutaneous diseases, and a still less number exclusively used for them; but your attention will now be drawn to the more common and more valuable means by which these disorders are alleviated. In connection with this subject, we may as well begin with Baths and Bathing. Bathing in some form or another has been a favourite remedy for many diseases for centuries; of late years, there have been some authors who have extolled bathing above all other methods

of cure, and these opinions have resulted in various forms of Hydropathy; but when this has been successful, the baths and douches have been only one item, and that the least, of a very stringently regulated mode and habit of life. Another author, having studied the tombstones of ancient Italy, finds that when public bathing was a popular custom, that the people lived a lesser than ordinary term of life; and, not noticing that this public bathing was only public ablution, the author concludes that the habit of using water daily is rather detrimental than otherwise to the system.

The right view of bathing in any form lies between these extremes; it only acts as a means of removal of the various secretions that have dried or hardened on the skin—as assisting in freeing the epithelial scales, as cleansing from dirt the surface generally, as freeing the apertures of the various ducts opening thereon, and as a general stimulus to the cutaneous circulation, and therefore an adjuvant to the increase of secretion by all the cutaneous glands. The necessity of bathing is in exact proportion as it is less frequently practised; and of all methods that have been adopted for the purpose of obtaining the results above named, there is none equal to that of the ordinary hot bath. A hot bath, temperature 98° Fah., in which the person is to remain for ten or fifteen minutes, then to be well scrubbed with a bathing glove and plenty of soap, and afterwards well washed down, does all that can

be done by means of water, and more than can be done by any other way of bathing. If the bath is now cooled down quickly to 65° Fah., or if a cold douche or shower-bath be taken, all danger of catching cold is avoided, and the person derives all the benefits without any risk.

The Turkish bath has been introduced into England of late years, and has become, from the agreeable nature of the process, very popular. Its special action is that it induces the exhalation of moisture from the mucous surfaces of the lungs as well as from the skin. This action may be an advantage or not; it is very valuable in many diseases, but has no particular merit in skin affections. In many people hot dry air does not cause the skin to act violently if the body is perfectly at rest; if excessive cutaneous action is then obtained, it is secondary to a general quickened circulation, not to the flow being determined to the surface.

The friction in these baths is a very variable quantity; the kneading process, as practised originally, is reduced to simple washing with soap and water. A vapour-bath is far superior to the Turkish for the promotion of perspiration; in this the head is excluded, and the vapour is not inhaled.

Medicinal baths are the excuse for resorting to various watering places, and as baths, are useful, but not equal to ordinary hot baths; whilst any supposed absorption by the skin of the various substances they contain is vastly inferior and more uncer-

tain than other methods of administration of the same as medicinal agents. The great advantages of these places are, that a person obtains relaxation from business, and makes his health a primary and all-absorbing study; this, together with change of habits and scene, possibly combined with a greater use of water than at home, is the secret of the success they attain.

Some are very fond of a cold bath every morning, and adhere to it in spite of great discomfort. It is very well as long only as it is agreeable, and followed by a universal reaction and glow; it is also better suited to those who are young, and whose skins freely perspire. It is not so efficacious for cleansing purposes as a warm bath, which can be taken every night with great advantage by those who are past middle age, or who perspire but little. In any case a cold bath should be taken instantly on getting out of bed, and no one should have to half dress and proceed through cold passages to a cold room for the purpose of cold bathing.

Some one has recently discovered that the application of very hot water checks excessive perspiration. A slight consideration of this subject shows how unscientific is such a proposal. Excessive sweating occurs either with a fast or a slow pulse. In the one case it is caused by the rapidity, in the other by the languor, of the circulation, joined in the latter case to relaxation of the skin. It is in all cases a sign, not a cause, of debility. How can the

abstraction of water from the circulation cause debility? and of water the perspiration principally consists.

Before any remedy can be necessary the excess must be nearly universal; and to be effectual the water must be hot enough to produce universal cutaneous congestion. In phthisis, for instance, the night-sweats are caused by the rapidity of the pulse, accompanying either some inflammatory process in the lungs, or caused by the blood having to be aërated in a diminished space. Can it be advisable under these circumstances to stop the cutaneous action—with one organ damaged, to impair the efficacy of another, and that, one which in some degree compensates for the ineffective state of the first?

If the pulse is slow, and the action of the skin is checked, the only result would be to cause effusion internally instead of on the surface. In fact, in many cases of exudation where the skin is only partially affected relief is often obtained, and is always to be sought for, by encouraging the sound portions to do double duty by means of baths, which may be rendered less irritating to any sore part by putting four or six pounds of bran in the bath instead of using soap. It is stated that the presence of Piles should militate against using Turkish baths. Why, it is not easy to see, for they do not affect the use of hot baths; and no one suggests that varicose veins of the leg are any obstacle to promoting cutaneous action.

Soap is a great adjuvant to all cleansing purposes; it is used either as potash or soft-soap, or as the ordinary soda soap, the former being more powerfully detergent than the latter. You will not, after reading these Letters, consider it imperative to adopt the idea that constitutional disease can be washed away, and therefore it is not necessary to consider the various saponaceous preparations suggested with that view. The choice of a soap is guided by it being efficacious, agreeable and economical. A soap should be sufficiently detergent to cleanse the skin; and for very dirty families some equally dirty soaps of the tar order may be advisable, but not otherwise.

White curd soap forms the basis of all fancy soaps. It is a nice soap itself, but has a tendency to break up into small pieces when partly used, which renders it rather wasteful.

Soaps can be mottled with various metallic earths, can be mixed with glycerine or oils, and can be largely adulterated and lowered in utility by water. If expense is not an object, there are very many mild, nicely perfumed fancy soaps that are very agreeable, and the transparent soap is very pure, being the result of solution in spirit, and subsequent evaporation of the alcohol; it is very quickly washed away, a great but only objection. For all purposes there is no soap superior to Old Brown Windsor; but even with this, as with any other, there are some skins which require a

little grease or oleaginous compound to prevent irritation from the use of the alkali.

When the skin is very tender, sensitive, and raw, every application but dusting with a light powder may cause irritation. Under these circumstances, lycopodium, zinc, calamine, starch, etc., reduced to the finest powder, can be used. Rice powder is employed by artistes to dust the face and arms, to counteract the yellow tinge given by footlights. They also use as part of their dressing many cosmetics, of which the various preparations of carmine form the red colouring principle, and bismuth or white lead the white base; the lead is much more dense than the bismuth, but not so permanent or innocuous.

Pomades are used for the skin or hair; they have either oil, suet or lard, as the oleaginous principle, with wax to give consistency; these are combined in various proportions, and scented or coloured at discretion.

The basis of all medicinal ointments is lard; if this is melted with powdered gum benzoin, Adipis ℥vi. , Gum Benzoin ℥i. , and afterwards strained, we have Benzoated Lard. If it is necessary to give this more consistence, white wax and spermaceti are added; if it is used for discharging surfaces, oxide of zinc is added, forming Benzoated Zinc ointment.

You must take care that no ointment becomes stiff and hard after application; and if there is

danger of irritation from this result, lard itself is preferable to the more consistent compounds.

Oxygenated lard is used to dilute the nitrate of mercury ointment, which is less discoloured by it than by the ordinary lard; the advantage is very slight, and it is not worth the trouble of obtaining the oxygenated preparation. The nitrate of mercury ointment, with an equal part of lard, is the best application for all parasitic diseases when there is no objection to mercurials.

The ordinary simple sulphur ointment answers very well for itch in adults; it may be diluted for children, or the storax ointment used. The latter is very soothing and efficacious; it is made thus:

R. Styracis Purific. ʒi.
Olei Olivæ ʒi.
Spir. Vini Rect. ʒii. M.

The stavesacre ointment is R. Ol. Staphisagr. ʒi., Adipis ʒi. M.

Two parts of sulphur, one of lime and twenty of water, boiled together, makes a coarse but rapid cure for itch.

The ointment of tar has been almost superseded by the more refined preparation of oil of cade, which ought to be prepared from the juniper tree, and not be simply refined tar, as it is very frequently.

The iodide of sulphur, or hypochloride of sulphur, with ointment, are generally far too irritating to be advisable, and have no special virtue to compensate for this fault.

With ointment, you can combine nitrate of silver, acetate of lard, sulphate of zinc, oil of cade, acetate of morphia, carbolic acid, alum, tannate of glycerine, and many other remedies, according as you wish to have a stimulant, astringent, sedative, or antiseptic action ; some of these act in an anti-pruriginous manner as well, but the most powerful against pruritus is Iodoform ʒi. , Adipis ʒi.

With all ointments, glycerine or honey may be combined ; they are agreeable diluents, and keep the applications soft for a longer period than unguents alone ; and if desirable and possible to disguise the smell of any medicament, it should be done by the addition of some fragrant oil.

The only embrocations you are likely to want, are those for baldness and chilblains ; they are rubefacients simply for the former, the latter generally has an opiate as well.

For chilblains, equal parts of chloroform, laudanum and soap liniment is a useful combination. A little tincture of cantharidis, or strong liquor ammonia, may be added if necessary.

For baldness, equal parts of cod liver oil and tincture of cantharidis should be well rubbed into the scalp.

Lotions resemble ointments in most respects, except that the base or vehicle is water instead of lard, and this vehicle may be rendered more agreeable, and in many cases more useful by the addition of confection of almonds, syrup, glycerine or

mucilage, by which the tendency to run off the skin is diminished; thus, ziii. of sweet almonds vastly improves ziv. of lotion.

For rubefacient purposes, zii-iiiii. of strong liquor ammonia to zviii. of water is used. Ten grains of nitrate of silver to the ounce of water is useful for improperly granulating or indolent ulcers.

Two drachms of hydrate of chloral to eight ounces of water is an antipruriginous lotion; with the same quantity of water, two scruples of tannin forms an astringent; four grains of muriate of morphia a sedative lotion.

Half a pint of water, with half an ounce of hyposulphite of soda, is useful in Tinea, but not equal to sulphurous acid, which may be undiluted.

The article sold as benzole may be made into a lotion as follows;

R. Benzole Rectif. ziv.
 Gum. Tragacanth zvi.
 Aquæ, zviii. M.

Oil of cade; with an equal part of iodine for Tinea Capitis, either Favosa or Tonsurans; or with glycerine for Eczema is a very valuable remedy. In the latter disease, a little liquor plumbi diacetatis may be combined with the glycerine if there is much inflammation.

The only mixtures that it is necessary to notice are the hydrag. bichlorid. and iodine, in which $\frac{1}{8}$ grain hydrag. is mixed with 4 grains iodide of potassium; and the acid iron mixture. This latter contains

sulphuric acid, sulphate of magnesia, and sulphate of iron. It is rather a coarse combination, and is liable to gripe the patient. For private practice it is preferable to give the iron and quinine in a pill, and the acid and magnesia with syrup, and a carminative as a mixture.

Sulphur with magnesia, or the compound liquorice powder, are both useful laxatives to some people; the sugar in the latter is sometimes nauseous; it may either be omitted or the powder taken in a little tea, which takes off the sweetness.

Iron may be given as the effervescing carbonate; an elegant preparation for children; as the sulphate, citrate, tartrate, perchloride, or saccharated carbonate. The citrate, in five grain doses with ten grains of the citrate of potash, is a very useful form in anæmia with exudation; it ought to form a clear mixture. The ammoniated tincture of iron ziii. with carbonate of ammonia ʒi. , infus. quassiae ʒviii. is valuable for anæmic eczems in women, especially if there are hysterical symptoms. Any preparation of iodide of iron is useful for the same disease, with scrofulous or glandular complications.

We have noticed nearly all the preparations of mercury but the pills of blue mass and soap, this is the formula—

R. Ung. Hydragryi ʒi.

Saponis Castell. ʒii. , M.,

and divide into 36 four-grain pills.

The only preparations of arsenic that you will

require are the liquor arsenicalis and liquor arsenici hydrochloridi, they may be given alone or in combination with all other medicines; the following is a useful prescription —

℞. Liquoris Arsenicalis ʒii.

Tinct. Ferri Chlor. ʒiiss.

Syrup. Simplicis ʒii.

Aquæ Distillatæ ad ʒiii. M.

Dose, a teaspoonful in a wineglassful of water, three times a day, after meals. In this iron and arsenic are combined, but you may replace the iron by acetate of potash ʒi, and obtain diuresis from the potash salt, instead of from the acid of the iron. You may equally give quinine, or any other tonic with the arsenic.

We will now conclude this letter and this correspondence, with noticing cod liver oil and collodion: for the various preparations of which glycerine and starch are the bases, offer no advantages over ointments.

Collodion, either flexible, styptic, or plain, is a very disappointing remedy; to be able to obtain a coating, which excludes the air, which is easily laid on and possessed of some adherent and possible medicated qualities, appears at first sight to be a valuable adjunct to the treatment of cutaneous diseases, and yet, except that it answers as a coating after the application of escharotics, and is useful in some few ulcerations, there is no special utility in its employment.

Cod Liver Oil is very valuable; it is not only useful internally, but in many cases is the best application externally; whenever an oil has to be used, as an animal oil it is superior to vegetable oils. Internally, it exerts a marked influence over many chronic cutaneous diseases of exudation and scrofula, but this influence is greatest when it augments the appetite, not when it replaces other food. To the poor it is an equivalent for food, and is one of the most expensive remedies at public charities, from the quantity thus dispensed. It ought to be clear, bright, and of a light yellowish green tinge, being made from the livers of cod fish, within a few hours after they are caught; after some delay, when these livers become slightly putrid, a brown tinge is given to the oil, a tinge which can be artificially produced by iodine; this coloured oil is inferior, and so is that which is manufactured in large quantities from rock salmon, a fish that abounds in the same localities as the cod fish.

With this notice these letters conclude; you will find that in general practice, nothing tends more to give confidence to your patient than a familiarity with cutaneous lesions, and nothing more contributes to his comfort than a successful treatment of such lesions. Dermatology has not the charms of operative surgery, nor the interest which is attached to dangerous or acute medical cases; but if these letters induce you to watch for yourself the visible changes that appear on the skin, and by study and

investigation to connect them aright with their invisible concomitants; if from their perusal you will take an interest in the great difficulties many cases present, and in the great simplicity of others, the object with which these letters were originally written will have been accomplished.

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